FILE 'HOME' ENTERED AT 09:36:23 ON 19 MAR 2001

=> s hedgehog and (glia or glial)

THIS COMMAND NOT AVAILABLE IN THE CURRENT FILE
Some commands only work in certain files. For example, the EXPAND command can only be used to look at the index in a file which has an index. Enter "HELP COMMANDS" at an arrow prompt (=>) for a list of commands which can be used in this file.

=> file medline

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.15	0.15

FILE 'MEDLINE' ENTERED AT 09:37:11 ON 19 MAR 2001

FILE LAST UPDATED: 27 OCT 2000 (20001027/UP). FILE COVERS 1958 TO DATE.

MEDLINE now contains new records from the former NLM HEALTH STAR database. These records have an Entry Date and Update Date of 20010223.

MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the MeSH 2001 vocabulary. Enter HELP THESAURUS for details.

The OLDMEDLINE file segment now contains data from 1958 through 1965. Enter HELP CONTENT for details.

Left, right, and simultaneous left and right truncation are available in the Basic Index. See HELP SFIELDS for details.

THIS FILE CONTAINS CAS REGISTRY NUMBERS FOR EASY AND ACCURATE SUBSTANCE IDENTIFICATION.

MEDLINE UPDATES ARE ON HOLD UNTIL AFTER THE ANNUAL RELOAD HAS BEEN COMPLETED. NOTICE WILL BE GIVEN ONCE THE RELOAD IS COMPLETED AND RELOAD DETAILS WILL BE FOUND IN HELP RLOAD.

=> s hedgehog and (glia or glial)

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      1596 HEDGEHOG
      5996 GLIA
     23353 GLIAL
L1       21 HEDGEHOG AND (GLIA OR GLIAL)
```

=> d ibib abs 1-21

L1 ANSWER 1 OF 21 MEDLINE

ACCESSION NUMBER:	2000246362 MEDLINE
DOCUMENT NUMBER:	20246362
TITLE:	The normal patched allele is expressed in medulloblastomas from mice with heterozygous germ-line mutation of patched.
AUTHOR:	Wetmore C; Eberhart D E; Curran T
CORPORATE SOURCE:	Department of Developmental Neurobiology, St Jude Children's Research Hospital, Memphis, TN 38105, USA.
CONTRACT NUMBER:	P30 CA 21765 (NCI)
SOURCE:	CANCER RESEARCH, (2000 Apr 15) 60 (8) 2239-46. Journal code: CNF. ISSN: 0008-5472.
PUB. COUNTRY:	United States

[redacted]rnal; Article; (JOURNAL ARTICL[redacted]
LANGUAGE: [redacted]glish
FILE SEGMENT: Priority Journals; Cancer Journals
ENTRY MONTH: 200007
ENTRY WEEK: 20000702
AB Defects in a developmental signaling pathway involving mammalian homologues of the Drosophila segment polarity gene, patched (ptc) and its ligand, sonic **hedgehog** (shh), contribute to tumor formation in several tissues. Recently, a subset of medulloblastoma, the most common malignant brain tumor in children, was found to contain somatic mutations in the human ptc gene. In addition, basal cell nevus syndrome (BCNS), or Gorlin syndrome, which is characterized by developmental anomalies and a predisposition to skin and nervous system malignancies, is associated with germ-line mutation of ptc. Targeted disruption of both alleles of ptc in mice results in embryonic lethality. However, ptc+/- mice survive and develop spontaneous cerebellar brain tumors, suggesting that ptc may function as a tumor suppressor gene. Therefore, we investigated ptc+/-mice as a model for human medulloblastoma. We report that 14% of ptc+/- mice develop central nervous system tumors in the posterior fossa by 10 months of age, with peak tumor incidence occurring between 16 and 24 weeks of age. The tumors exhibited several characteristics of human medulloblastoma, including expression of intermediate filament proteins specific for neurons and **glia**. Full-length ptc mRNA was present in all tumors analyzed, indicating that there was no loss of heterozygosity at the ptc locus. Nucleotide sequence of ptc mRNA from four tumors failed to identify any mutations. However, a comparison of the normal ptc sequence from C57BL/6 and 129Sv mice did reveal several polymorphisms. High levels of glil mRNA and protein were detected in the tumors, suggesting that the shh/ptc pathway was activated despite the persistence of ptc expression. These data indicate that haploinsufficiency of ptc is sufficient to promote oncogenesis in the central nervous system.

L1 ANSWER 2 OF 21 MEDLINE
ACCESSION NUMBER: 2000227086 MEDLINE
DOCUMENT NUMBER: 20227086
TITLE: Soluble factors and the development of rod photoreceptors.
AUTHOR: Levine E M; Fuhrmann S; Reh T A
CORPORATE SOURCE: Department of Biological Structure, University of Washington School of Medicine, Seattle 98195, USA.. edward.levine@hsc.utah.edu
SOURCE: CELLULAR AND MOLECULAR LIFE SCIENCES, (2000 Feb) 57 (2) 224-34. Ref: 83
Journal code: CLE. ISSN: 1420-682X.
PUB. COUNTRY: Switzerland
Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LANGUAGE: English
FILE SEGMENT: Priority Journals; Cancer Journals
ENTRY MONTH: 200006
ENTRY WEEK: 20000605
AB Photoreceptors are the most abundant cell type in the vertebrate neural retina. Like the other retinal neurons and the Muller **glia**, they arise from a population of precursor cells that are multipotent and intrinsic to the retina. Approximately 10 years ago, several studies demonstrated that retinal precursor cells (RPCs) are competent to respond to environmental factors that promote cell type determination and differentiation. Since those studies, significant effort has been directed at identifying the molecular nature of these environmental signals and understanding the precise mechanisms they employ to drive RPCs towards the different retinal fates. In this review, we describe the recent progress

toward understanding how environmental factors influence the development of vertebrate [redacted] photoreceptors.

L1 ANSWER 3 OF 21 MEDLINE
ACCESSION NUMBER: 2000194108 MEDLINE
DOCUMENT NUMBER: 20194108
TITLE: Why are growth factors important in oligodendrocyte physiology?.
AUTHOR: Dubois-Dalcq M; Murray K
CORPORATE SOURCE: Unite de Neurovirologie et Regeneration du Syst`eme Nerveux, Institut Pasteur, Paris, France.
SOURCE: PATHOLOGIE BIOLOGIE, (2000 Feb) 48 (1) 80-6. Ref: 58
Journal code: OSG. ISSN: 0369-8114.
PUB. COUNTRY: France
Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200006
ENTRY WEEK: 20000602
AB Recent studies in chicken, rodents and transgenic mice have provided new insight on the nature of factors essential to oligodendrocyte development.
Here we first review how sonic **hedgehog** (shh) graded signalling induces emergence of oligodendrocytes in the embryonic spinal cord from birds to man. We then discuss the way in which thyroid hormone successively signals different thyroid receptors to control fate determination, growth and differentiation in the oligodendrocyte lineage. Platelet-derived growth factor (PDGF) is a potent regulator of oligodendrocyte progenitor (OP) migration and proliferation, while insulin-like growth factor 1 (IGF-1) acts both on neurons and myelin-forming cells to promote myelination. The balance between OP proliferation and differentiation appears to be controlled by different sets of growth factors locally synthesized in the central nervous system (CNS) as well as glutamate. In experimental models of multiple sclerosis (MS), the neuregulin isoform **glial** growth factor 2, IGF-1 and some neurotrophins can promote remyelination after an episode of inflammatory demyelination. A future challenge is to determine how to induce multipotential neural precursors to generate migratory OP and enhance the remyelination process in the adult CNS.

L1 ANSWER 4 OF 21 MEDLINE
ACCESSION NUMBER: 2000053606 MEDLINE
DOCUMENT NUMBER: 20053606
TITLE: From neural stem cells to myelinating oligodendrocytes.
AUTHOR: Rogister B; Ben-Hur T; Dubois-Dalcq M
CORPORATE SOURCE: Department of Human Physiology, University of Li`ege, Belgium.
SOURCE: MOLECULAR AND CELLULAR NEUROSCIENCES, (1999 Oct-Nov) 14 (4-5) 287-300. Ref: 140
Journal code: B1D. ISSN: 1044-7431.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200003
ENTRY WEEK: 20000302
AB The potential to generate oligodendrocytes progenitors (OP) from neural stem cells (NSCs) exists throughout the developing CNS. Yet, in the embryonic spinal cord, the oligodendrocyte phenotype is induced by sonic **hedgehog** in a restricted anterior region. In addition, neuregulins are emerging as potent regulators of early and late OP development. The ability to isolate and grow NSCs as well as **glial**-restricted progenitors has revealed that FGF2 and thyroid hormone favor an oligodendrocyte fate. Analysis of genetically modified mice showed that PDGF controls the migration and production of oligodendrocytes in vivo.

Interplay betwe[redacted] mitogens, thyroid hormone, and [redacted]eurotransmitters may maintain the u[redacted]fferentiated stage or result i[redacted] growth arrest. Notch signaling by axons inhibits oligodendrocyte differentiation until neuronal signals--linked to electrical activity-trigger initiation of myelination. To repair myelin in adult CNS, multipotential neural precursors, rather than slowly cycling OP, appear the cells of choice to rapidly generate myelin-forming cells.

L1 ANSWER 5 OF 21 MEDLINE
ACCESSION NUMBER: 1999428953 MEDLINE
DOCUMENT NUMBER: 99428953
TITLE: Molecular control of cell type diversity in the developing spinal cord.
AUTHOR: Yamada T; Karunaratne A; Hargrave M
CORPORATE SOURCE: Centre for Molecular and Cellular Biology, University of Queensland, Brisbane, Australia.. t.yamada@cmcb.uq.edu.au
SOURCE: CLINICAL AND EXPERIMENTAL PHARMACOLOGY AND PHYSIOLOGY, (1999 Sep) 26 (9) 741-5.
Journal code: DD8. ISSN: 0305-1870.
PUB. COUNTRY: Australia
Conference; Conference Article; (CONGRESSES)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200001
ENTRY WEEK: 20000104
AB 1. During embryonic development, a diverse array of neurons and **glia** are generated at specific positions along the dorsoventral and rostro-caudal axes of the spinal cord from a common pool of precursor cells. 2. This cell type diversity can be distinguished by the spatially and temporally coordinated expression of several transcription factors that are also linked to cell type specification at a very early stage of spinal cord development. 3. Recent studies have started to uncover that the generation of cell type diversity in the developing spinal cord. Moreover, distinct cell types in the spinal cord appear to be determined by the spatially and temporally coordinated expression of transcription factors. 4. The expression of these factors also appears to be controlled by gradients of factors expressed by ventral and dorsal midline cells, namely Sonic **hedgehog** and members of the transforming growth factor-beta family. 5. Changes in the competence of precursor cells and local cell interactions may also play important roles in cell type specification within the developing spinal cord.

L1 ANSWER 6 OF 21 MEDLINE
ACCESSION NUMBER: 1999409964 MEDLINE
DOCUMENT NUMBER: 99409964
TITLE: Schwann cell-derived Desert **hedgehog** controls the development of peripheral nerve sheaths [see comments].
COMMENT: Comment in: Neuron 1999 Aug;23(4):627-9
AUTHOR: Parmantier E; Lynn B; Lawson D; Turmaine M; Namini S S; Chakrabarti L; McMahon A P; Jessen K R; Mirsky R
CORPORATE SOURCE: Department of Anatomy and Developmental Biology, University College London, United Kingdom.
SOURCE: NEURON, (1999 Aug) 23 (4) 713-24.
Journal code: AN8. ISSN: 0896-6273.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199911
AB We show that Schwann cell-derived Desert **hedgehog** (Dhh) signals the formation of the connective tissue sheath around peripheral nerves. mRNAs for dhh and its receptor patched (ptc) are expressed in Schwann cells and perineural mesenchyme, respectively. In dhh-/- mice, epineurial collagen is reduced, while the perineurium is thin and disorganized, has patchy basal lamina, and fails to express connexin 43. Perineurial tight junctions are abnormal and allow the passage of proteins and neutrophils. In nerve fibroblasts, Dhh upregulates ptc and **hedgehog**

-interacting protein (hip). These experiments reveal a novel developmental signaling pathway between **glia** and mesenchymal connective tissue and demonstrate its molecular identity in peripheral nerve. They also show that Schwann cell-derived signals can act as important regulators of nerve development.

L1 ANSWER 7 OF 21 MEDLINE
ACCESSION NUMBER: 1999307074 MEDLINE
DOCUMENT NUMBER: 99307074
TITLE: Sonic **hedgehog** regulates the growth and patterning of the cerebellum.
AUTHOR: Dahmane N; Ruiz-i-Altaba A
CORPORATE SOURCE: The Skirball Institute, Developmental Genetics Program and Department of Cell Biology, NYU School of Medicine, New York, NY 10016, USA.. ria@saturn.med.nyu.edu
CONTRACT NUMBER: CA78736 (NCI)
SOURCE: DEVELOPMENT, (1999 Jun) 126 (14) 3089-100.
Journal code: ECW. ISSN: 0950-1991.
PUB. COUNTRY: ENGLAND: United Kingdom
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199910
ENTRY WEEK: 19991003
AB The molecular bases of brain development and CNS malignancies remain poorly understood. Here we show that Sonic **hedgehog** (Shh) signaling controls the development of the cerebellum at multiple levels. SHH is produced by Purkinje neurons, it is required for the proliferation of granule neuron precursors and it induces the differentiation of Bergmann **glia**. Blocking SHH function in vivo results in deficient granule neuron and Bergmann **glia** differentiation as well as in abnormal Purkinje neuron development. Thus, our findings provide a molecular model for the growth and patterning of the cerebellum by SHH through the coordination of the development of cortical cerebellar cell types. In addition, they provide a cellular context for medulloblastomas, childhood cancers of the cerebellum.

L1 ANSWER 8 OF 21 MEDLINE
ACCESSION NUMBER: 1999287799 MEDLINE
DOCUMENT NUMBER: 99287799
TITLE: A role for Sonic **hedgehog** in axon-to-astrocyte signalling in the rodent optic nerve.
AUTHOR: Wallace V A; Raff M C
CORPORATE SOURCE: Medical Research Council Developmental Neurobiology Programme, MRC Laboratory for Molecular Cell Biology and the Biology Department, University College London, London WC1E 6BT, UK.. vwallace@ogh.on.ca
SOURCE: DEVELOPMENT, (1999 Jul) 126 (13) 2901-9.
Journal code: ECW. ISSN: 0950-1991.
PUB. COUNTRY: ENGLAND: United Kingdom
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199909
ENTRY WEEK: 19990905
AB Retinal ganglion cell (RGC) axons have been shown to stimulate the proliferation of astrocytes in the developing rodent optic nerve, but the signals that mediate this effect have not been identified. The following findings suggest that Sonic **hedgehog** (Shh) is one of the signals. (1) RGCs express both Shh mRNA and protein, whereas the optic nerve contains the protein but not the mRNA. (2) Astrocytes and their precursors in the developing optic nerve express the **Hedgehog** (Hh) receptor gene Patched (Ptc), suggesting that they are being signalled by an Hh protein. (3) Ptc expression in the nerve is greatly decreased by either nerve transection or by treatment with neutralizing anti-Shh

antibodies, suggesting that it depends on axon-derived Shh. (4) Astrocyte proliferation in the developing nerve is reduced by treatment with anti-Shh antibodies, suggesting that Shh normally helps stimulate this proliferation.

L1 ANSWER 9 OF 21 MEDLINE
ACCESSION NUMBER: 1999235153 MEDLINE
DOCUMENT NUMBER: 99235153
TITLE: The neurobiology of Schwann cells.
AUTHOR: Mirsky R; Jessen K R
CORPORATE SOURCE: Department of Anatomy and Developmental Biology, University
College London, UK.. r.mirsky@ucl.ac.uk
SOURCE: BRAIN PATHOLOGY, (1999 Apr) 9 (2) 293-311. Ref: 179
Journal code: BYB. ISSN: 1015-6305.
PUB. COUNTRY: Switzerland
Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, ACADEMIC)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199908
AB This selective review of Schwann cell biology focuses on questions relating to the origins, development and differentiation of Schwann cells and the signals that control these processes. The importance of neuregulins and their receptors in controlling Schwann cell precursor survival and generation of Schwann cells, and the role of these molecules in Schwann cell biology is addressed. The reciprocal signalling between peripheral **glial** cells and neurons in development and adult life revealed in recent years is highlighted, and the profound change in survival regulation from neuron-dependent Schwann cell precursors to adult
Schwann cells that depend on autocrine survival signals is discussed. Besides providing neuronal and autocrine signals, Schwann cells signal to mesenchymal cells and influence the development of the connective tissue sheaths of peripheral nerves. The importance of Desert **Hedgehog** in this process is described. The control of gene expression during Schwann cell development and differentiation by transcription factors is reviewed. Knockout of Oct-6 and Krox-20 leads to delay or absence of myelination, and these results are related to morphological or physiological observations on knockout or mutation of myelin-related genes. Finally, the relationship between selected extracellular matrix components, integrins and the cytoskeleton is explored and related to disease.

L1 ANSWER 10 OF 21 MEDLINE
ACCESSION NUMBER: 1998399902 MEDLINE
DOCUMENT NUMBER: 98399902
TITLE: Signals transmitted along retinal axons in Drosophila: **Hedgehog** signal reception and the cell circuitry of lamina cartridge assembly.
AUTHOR: Huang Z; Kunes S
CORPORATE SOURCE: Department of Molecular and Cellular Biology, Harvard University, Cambridge, MA 02138, USA.
CONTRACT NUMBER: EY10112 (NEI)
SOURCE: DEVELOPMENT, (1998 Oct) 125 (19) 3753-64.
Journal code: ECW. ISSN: 0950-1991.
PUB. COUNTRY: ENGLAND: United Kingdom
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199901
ENTRY WEEK: 19990104
AB The arrival of retinal axons in the brain of Drosophila triggers the assembly of **glial** and neuronal precursors into a 'neurocrystalline' array of lamina synaptic 'cartridges'. **Hedgehog**, a secreted protein, is an inductive signal delivered by retinal axons for the initial steps of lamina differentiation. In the development of many tissues, **Hedgehog** acts in a signal relay cascade via the

induction of secondary secreted factors. Here we show that lamina neuronal
precursors respond directly to **Hedgehog** signal reception by entering S-phase, a step that is controlled by the **Hedgehog** -dependent transcriptional regulator Cubitus interruptus. The terminal differentiation of neuronal precursors and the migration and differentiation of **glia** appear to be controlled by other retinal axon-mediated signals. Thus retinal axons impose a program of developmental events on their postsynaptic field utilizing distinct signals for different precursor populations.

L1 ANSWER 11 OF 21 MEDLINE
ACCESSION NUMBER: 1998284447 MEDLINE
DOCUMENT NUMBER: 98284447
TITLE: Regulation and function of tinman during dorsal mesoderm induction and heart specification in Drosophila.
AUTHOR: Yin Z; Frasch M
CORPORATE SOURCE: Brookdale Center for Developmental and Molecular Biology, Mount Sinai School of Medicine, New York, New York 10029, USA.
CONTRACT NUMBER: HD30832 (NICHD)
SOURCE: DEVELOPMENTAL GENETICS, (1998) 22 (3) 187-200.
Journal code: DEG. ISSN: 0192-253X.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199809
ENTRY WEEK: 19980904
AB The homeobox gene tinman plays a key role in the specification of Drosophila heart progenitors and the visceral mesoderm of the midgut, both
of which arise at defined positions within dorsal areas of the mesoderm. Here, we show that in addition to the heart and midgut visceral mesoderm, tinman is also required for the specification of all dorsal body wall muscles. Thus it appears that the precursors of the heart, visceral musculature, and dorsal somatic muscles are all specified within the same broad domain of dorsal mesodermal tinman expression. Locally restricted activities of tinman are also observed during its early, general mesodermal expression, where tinman is required for the activation of the homeobox gene buttonless in precursors of the "dorsal median" (DM) **glial** cells along the ventral midline. These observations, together with others showing only mild effects of ectopic tinman expression on heart development, indicate that tinman function is obligatory, but not sufficient to determine individual tissues within the mesoderm. Therefore, we propose that tinman has a role in integrating positional information that is provided by intersecting domains of additional regulators and signals, which may include Wingless, Sloppy Paired, and **Hedgehog** in the dorsal mesoderm and EGF-signaling at the ventral midline. Previous studies have shown that Dpp acts as an inductive signal from dorsal ectodermal cells to induce tinman expression in the dorsal mesoderm, which, in turn, is needed for heart and visceral mesoderm formation. In the present report, we show that Thickveins, a type
I receptor of Dpp, is essential for the transmission of Dpp signals into the mesoderm. Constitutive activity of Tkv in the entire mesoderm induces ectopic tinman expression in the ventral mesoderm, and this results in the
ectopic formation of heart precursors in a defined area of the ventrolateral mesoderm. We further show that Screw, a second BMP2/4-related gene product, Tolloid, a BMP1-related protein, and the zinc
finger-containing protein Schnurri, are required to allow full levels of tinman induction during this process. It is likely that some of these functional and regulatory properties of tinman are shared by tinman-related genes from vertebrates that have similarly important roles in embryonic heart development.

L1 ANSWER 12 OF 21 MEDLINE

ACCESSION NUMBER: 98038861 MEDLINE
DOCUMENT NUMBER: 98038861
TITLE: Dorsoventral patterning and oligodendroglial specification in the developing central nervous system.
AUTHOR: Hardy R J
CORPORATE SOURCE: Brookdale Center for Developmental and Molecular Biology, Mount Sinai Medical Center, New York, New York 10029, USA..
hardy@anton.molbio.mssm.edu
CONTRACT NUMBER: NS33165 (NINDS)
SOURCE: JOURNAL OF NEUROSCIENCE RESEARCH, (1997 Oct 15) 50 (2) 139-45. Ref: 31
Journal code: KAC. ISSN: 0360-4012.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199803
ENTRY WEEK: 19980303
AB While the bulk of oligodendendrocytes are generated postnatally in rodents, it is now clear that the first oligodendrocytes are born during midembryonic development. Recent studies imply that the first oligodendrocytes to appear are specified concurrently with certain neuronal subtypes. In addition, patterning molecules known to confer positional information on neural tissues during development, such as sonic
hedgehog and bone morphogenetic proteins, have also been implicated in the specification of **glial** fate. This review discusses some of the recent advances in our knowledge of how oligodendrocytes are generated and the mechanisms by which this might occur in the developing brain and spinal cord.

L1 ANSWER 13 OF 21 MEDLINE
ACCESSION NUMBER: 97468980 MEDLINE
DOCUMENT NUMBER: 97468980
TITLE: Specification and survival of dopaminergic neurons in the mammalian midbrain.
AUTHOR: Rosenthal A
CORPORATE SOURCE: Department of Neuroscience, Genentech, Inc., South San Francisco, California 94080, USA.
SOURCE: ADVANCES IN PHARMACOLOGY, (1998) 42 908-11.
Journal code: AXI. ISSN: 1054-3589.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199801
ENTRY WEEK: 19980104

L1 ANSWER 14 OF 21 MEDLINE
ACCESSION NUMBER: 97342669 MEDLINE
DOCUMENT NUMBER: 97342669
TITLE: The Pax protein Noi is required for commissural axon pathway formation in the rostral forebrain.
AUTHOR: Macdonald R; Scholes J; Strahle U; Brennan C; Holder N; Brand M; Wilson S W
CORPORATE SOURCE: Developmental Biology Research Centre, Randall Institute, Kings College London, UK.
SOURCE: DEVELOPMENT, (1997 Jun) 124 (12) 2397-408.
Journal code: ECW. ISSN: 0950-1991.
PUB. COUNTRY: ENGLAND: United Kingdom
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199709
ENTRY WEEK: 19970903
AB No-isthmus (Noi) is a member of the zebrafish Pax family of

transcriptional regulators that is expressed in restricted domains of the developing CNS. In the developing eye and optic nerve, the Noi+ cells are primitive **glial** cells that line the choroid fissure and optic stalk/nerve to its junction with the optic tract. This pattern of Noi expression is retained in the adult, defining the optic nerve astroglia, which wrap the left and right nerves separately at the midline, thus forming the bodily crossed optic chiasm found in fish. In embryos carrying mutations in the noi gene, the choroid fissure fails to close, **glial** cells of the optic nerve fail to differentiate and optic axons exhibit abnormal trajectories exiting the eye and at the midline of the diencephalon. Optic axons select inappropriate pathways into the contralateral optic nerve, rostrally towards the anterior commissure and along the ipsilateral optic tract. Noi+ cells also border the pathway of axons in the postoptic commissure, which is located adjacent to the optic chiasm. These postoptic commissural axons are defasciculated and also exhibit pathfinding defects in noi- embryos. These results indicate that Noi is required in cells that line the pathways taken by optic and non-optic commissural axons for guidance across the midline of the diencephalon. We find that expression of two members of the Netrin family of axon guidance molecules and the signalling protein Sonic **hedgehog** is disturbed in noi- embryos, whereas several members of the Eph family of receptors and ligands show no obvious alterations in expression at the diencephalic midline.

L1 ANSWER 15 OF 21 MEDLINE
ACCESSION NUMBER: 97330680 MEDLINE
DOCUMENT NUMBER: 97330680
TITLE: Requirements of DFR1/Heartless, a mesoderm-specific Drosophila FGF-receptor, for the formation of heart, visceral and somatic muscles, and ensheathing of longitudinal axon tracts in CNS.
AUTHOR: Shishido E; Ono N; Kojima T; Saigo K
CORPORATE SOURCE: Department of Biophysics and Biochemistry, Graduate School of Science, University of Tokyo, Bunkyo-ku, Japan.
SOURCE: DEVELOPMENT, (1997 Jun) 124 (11) 2119-28.
Journal code: ECW. ISSN: 0950-1991.
PUB. COUNTRY: ENGLAND: United Kingdom
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199709
AB DFR1 encodes a mesoderm-specific fibroblast growth factor receptor in Drosophila. Here, we identified and characterized a protein-null mutant of DFR1 and examined DFR1 expression in embryos using anti-DFR1 antibody. Mutant phenotypes were completely rescued by a genomic fragment from the DFR1 locus. After invagination, mesodermal cells expressing DFR1 undergo proliferation and spread out dorsally to form a monolayer beneath the ectoderm. In mutant embryos, however, the mesoderm is not capable of extending to the normal dorsal limit and consequently mesodermal cells fail to receive ectodermal signals and thus rendered incapable of differentiating into primordia for the heart, visceral and somatic muscles. DFR1 is also required for normal development of the central nervous system. The absence of DFR1 resulted in the failure of longitudinal **glia** to enwrap longitudinal axon tracts. DFR1 mutant phenotypes were partially mimicked by the targeted expression of activated Yan, thus demonstrating the MAP kinase pathway to be involved in differentiation of mesoderm.

L1 ANSWER 16 OF 21 MEDLINE
ACCESSION NUMBER: 97233435 MEDLINE
DOCUMENT NUMBER: 97233435
TITLE: Origins of spinal cord oligodendrocytes: possible developmental and evolutionary relationships with motor neurons.
AUTHOR: Richardson W D; Pringle N P; Yu W P; Hall A C
CORPORATE SOURCE: MRC Laboratory for Molecular Cell Biology, University

lege London, UK.
SOURCE: ELOPMENTAL NEUROSCIENCE, (199[redacted]9 (1) 58-68. Ref: 44
Journal code: EC5. ISSN: 0378-5866.
PUB. COUNTRY: Switzerland
Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199707
ENTRY WEEK: 19970705
AB Spinal cord oligodendrocytes develop from migratory **glial** progenitor cells that are generated by a small subset of neuroepithelial cells in the ventral part of the neural tube. Specification of these neuroepithelial oligodendrocyte precursors, in common with other ventral cells such as motor neurons, depends on morphogenetic signals from the notochord and/or floor plate. The ventrally derived signals can be mimicked in vitro by purified Sonic **hedgehog** (Shh) protein. Oligodendrocytes and motor neurons are induced over the same range of concentrations of Shh, consistent with the idea that Shh might specify a common precursor of motor neurons and oligodendrocytes. A lineage relationship between motor neurons and oligodendrocytes has previously been suggested by clonal analysis in the embryonic chick spinal cord. We propose a lineage diagram that connects oligodendrocytes and motor neurons and that takes into account the fact that motor neurons and oligodendrocyte precursors are generated at different times during development. Oligodendrocytes might originally have evolved to ensheath motor axons and facilitate a rapid escape response. If so, oligodendrocyte ontogeny and phylogeny might share a common basis.

L1 ANSWER 17 OF 21 MEDLINE
ACCESSION NUMBER: 97209482 MEDLINE
DOCUMENT NUMBER: 97209482
TITLE: Establishing neuroblast-specific gene expression in the Drosophila CNS: huckebein is activated by Wingless and **Hedgehog** and repressed by Engrailed and Gooseberry.
AUTHOR: McDonald J A; Doe C Q
CORPORATE SOURCE: Howard Hughes Medical Institute, Department of Cell and Structural Biology, University of Illinois, Urbana 61801, USA.
CONTRACT NUMBER: 27056
SOURCE: DEVELOPMENT, (1997 Mar) 124 (5) 1079-87.
Journal code: ECW. ISSN: 0950-1991.
PUB. COUNTRY: ENGLAND: United Kingdom
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199706
ENTRY WEEK: 19970602
AB The Drosophila ventral neuroectoderm produces a stereotyped array of central nervous system precursors, called neuroblasts. Each neuroblast has a unique identity based on its position, pattern of gene expression and cell lineage. To understand how neuronal diversity is generated, we need to learn how neuroblast-specific gene expression is established, and how these genes control cell fate within neuroblast lineages. Here we address the first question: how is neuroblast-specific gene expression established? We focus on the huckebein gene, because it is expressed in a subset of neuroblasts and is required for aspects of neuronal and **glial** determination. We show that Huckebein is a nuclear protein first detected in small clusters of neuroectodermal cells and then in a subset of neuroblasts. The secreted Wingless and **Hedgehog** proteins activate huckebein expression in distinct but overlapping clusters of neuroectodermal cells and neuroblasts, whereas the nuclear Engrailed and Gooseberry proteins repress huckebein expression in specific regions of neuroectoderm or neuroblasts. Integration of these activation

and repression uts is required to establish t precise neuroectodermal pattern of huckebein, which is subsequently required for the development of specific neuroblast cell lineages.

L1 ANSWER 18 OF 21 MEDLINE
ACCESSION NUMBER: 97178971 MEDLINE
DOCUMENT NUMBER: 97178971
TITLE: Expression of Sonic **hedgehog** and its putative role as a precursor cell mitogen in the developing mouse retina.
AUTHOR: Jensen A M; Wallace V A
CORPORATE SOURCE: MRC Developmental Neurobiology Programme, University College London, UK.
SOURCE: DEVELOPMENT, (1997 Jan) 124 (2) 363-71. Journal code: ECW. ISSN: 0950-1991.
PUB. COUNTRY: ENGLAND: United Kingdom
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199705
AB We show that Sonic **hedgehog** and patched are expressed in adjacent domains in the developing mouse retina. Treatment of cultures of perinatal mouse retinal cells with the amino-terminal fragment of Sonic **hedgehog** protein results in an increase in the proportion of cells that incorporate bromodeoxuridine, in total cell numbers, and in rod photoreceptors, amacrine cells and Muller **glial** cells, suggesting that Sonic **hedgehog** promotes the proliferation of retinal precursor cells. These findings suggest that **hedgehog** and patched are part of a conserved signalling pathway in retinal development in mammals and insects.

L1 ANSWER 19 OF 21 MEDLINE
ACCESSION NUMBER: 93199849 MEDLINE
DOCUMENT NUMBER: 93199849
TITLE: Two components of the pineal organ in the mink (Mustela vison): their structural similarity to submammalian pineal complexes and calcification.
AUTHOR: Vigh B; Vigh-Teichmann I
CORPORATE SOURCE: Second Department of Anatomy, Histology and Embryology, Semmelweis University Medical School, Budapest, Hungary.
SOURCE: ARCHIVES OF HISTOLOGY AND CYTOLOGY, (1992 Dec) 55 (5) 477-89. Journal code: ARO. ISSN: 0914-9465.
PUB. COUNTRY: Japan
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199306
AB The pineal complex in the mink (Mustela vison) consists of a larger ventral and a smaller dorsal pineal. Both organs contain pinealocytes, neurons, **glial** cells, nerve fibers and synapses in an organization characteristic of nervous tissue. The cellular elements are arranged circularly around strait lumina. These lumina correspond to the photoreceptor spaces of submammalian pineals. A 9 + 0-type cilium marks the receptory pole of the pinealocytes which may form an inner-segment-like dendrite terminal in the pineal lumina. The cilia correspond to outer segments which form photoreceptor membrane multiplications in the pineal of submammalians and in certain insectivorous and mustelid mammals (bat, **hedgehog**, ferret). Axonal processes of the pinealocytes contain synaptic ribbons and terminate on intrapineal neurons of both organs. This pattern represents a neural efferentation of the pineal nervous tissue. The axonal processes of pinealocytes also form neurohormonal endings which pierce the perivascular limiting **glial** membrane in the ventral as well as in the dorsal pineal. The upper pineal ("epipineal") of the mink may correspond to the

parapineal, fr[redacted]al, or parietal organs of subma[redacted]alian pineal complexes. Both pineals a[redacted]encapsulated by the meningeal [redacted]sue of the brain stem. Afferent vasomotor axons of the meninges innervate smooth muscle cells of pineal arterioles. There are corpora arenacea in the pineal arachnoid and in the pineal nervous tissue, primarily in the ventral pineal. The localization of calcium ions detected around the membrane of pineal cells by pyroantimonate cytochemistry suggests membrane activity as the source of the calcium ions. The accumulation of calcium by the pinealocytes may be due to their neurosensory character. The mink is the first animal described to have both intrapineal and meningeal concrements like the human pineal.

L1 ANSWER 20 OF 21 MEDLINE
ACCESSION NUMBER: 91332195 MEDLINE
DOCUMENT NUMBER: 91332195
TITLE: Neuroglial arrangements in the olfactory glomeruli of the **hedgehog**.
AUTHOR: Valverde F; Lopez-Mascaraque L
CORPORATE SOURCE: Laboratorio de Neuroanatomia Comparada, Instituto Cajal (CSIC), Madrid, Spain..
SOURCE: JOURNAL OF COMPARATIVE NEUROLOGY, (1991 May 22) 307 (4) 658-74.
Journal code: HUV. ISSN: 0021-9967.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199111
AB The olfactory glomeruli represent morphological and functional units in which olfactory information is processed in specialized synaptic arrangements established between the central processes of sensory neurons, whose cell bodies are located in the olfactory epithelium, and the terminal (intraglomerular) portions of the dendrites of periglomerular, tufted, and mitral cells. The olfactory glomeruli are surrounded by distinctive **glial** formations in which the peripheral **glia** interacts with the central **glia**. We have studied the morphology and organization of neuroglial cells in the layer of olfactory nerves and the glomerular layer of the olfactory bulb in the insectivorous **hedgehog** (Erinaceus europaeus) with the electron microscope, Golgi method, and immunohistochemistry by using antibodies to **glial** fibrillary acidic protein (GFAP) and "rip," a monoclonal antibody that stains oligodendrocytes and their processes in the rat (Friedman et al.: **Glia** 2:380-390, '89). The peripheral **glia** is represented by a special category of cells that are closely related to astrocytes and known as sheathing cells. They accompany olfactory axons to their entrance in the glomeruli where they interact with the central **glia**, represented by astrocytes and oligodendrocytes. The sheathing cells typically display indented nuclei and protoplasmic expansions forming laminar processes wrapping several axons together. Astrocytes surrounding the glomerular neuropil belong to the velate type. They display numerous sheet-like processes enveloping dendritic segments and periglomerular cell bodies. Oligodendrocytes were found surrounding the glomeruli and at the interstices separating different glomeruli. Myelinated dendritic segments and cell bodies were found surrounding the olfactory glomeruli. These myelin coverings probably derive from oligodendrocytes. Together with the astrocytic lamellar expansions, they provide a rigid structural support that contributes to the segregation of group of different cells while remaining relatively isolated from other influences at the periphery of the glomeruli.

L1 ANSWER 21 OF 21 MEDLINE
ACCESSION NUMBER: 86156768 MEDLINE
DOCUMENT NUMBER: 86156768
TITLE: Periaqueductal neurons associated to the posterior commissure: a morphological study in the **hedgehog** , rat and cat.

AUTHOR: [redacted]ra M H
SOURCE: [redacted]ATOMISCHER ANZEIGER, (1985) 15[redacted]-5) 195-201.
Journal code: 4PE. ISSN: 0003-2786.
PUB. COUNTRY: GERMANY, EAST: German Democratic Republic
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198606

AB The existence of a hitherto undescribed PAG neuronal subdivision and its close relationship with the posterior commissure were studied with silver reduced stains and the electron microscope in the **hedgehog**, rat and cat. The PAG neurons are arranged in discrete groups composed of 2 up to 6 perikaria surrounded by a fiber and **glial** neuropil. The dendrites of these neurons established synaptic contacts with the ventral commissural fibers and in addition were innervated by PAG intrinsic axons.

On the other hand, discrete non-myelinated bundles which apparently arise from the PAG enter through the commissural fibers and makes synaptic contacts with dendritic profiles situated in the intracommissural neuropil zones. These morphological results were discussed in view of a change in the theories that consider the PAG as an non-specific functional group of neurons.

=> s hedgehog and (peripheral)

1596 HEDGEHOG
228690 PERIPHERAL
L2 24 HEDGEHOG AND (PERIPHERAL)

=> s l2 not l1

L3 21 L2 NOT L1

=> d ibib abs1-21

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=> d ibib abs 1-21 l2

L2 ANSWER 1 OF 24 MEDLINE
ACCESSION NUMBER: 2000493433 MEDLINE
DOCUMENT NUMBER: 20428049
TITLE: Cortical organization in insectivora: the parallel evolution of the sensory periphery and the brain.
AUTHOR: Catania K C
CORPORATE SOURCE: Department of Biological Sciences, Vanderbilt University, Nashville, TN 37235, USA.. ken.catania@vanderbilt.edu
SOURCE: BRAIN, BEHAVIOR AND EVOLUTION, (2000 Jun) 55 (6) 311-21. Ref: 38
Journal code: B5G. ISSN: 0006-8977.
PUB. COUNTRY: Switzerland
Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200012
ENTRY WEEK: 20001204
AB Insectivores are traditionally described as a primitive group that has not changed much in the course of mammalian evolution. In contrast, recent studies reveal a great diversity of sensorimotor specializations among insectivores adapted to a number of different ecological niches, indicating that there has been significant diversification and change in the course of their evolution. Here the organization of sensory cortex is compared in the African **hedgehog** (Atelerix albiventris), the masked shrew (Sorex cinereus), the eastern mole (Scalopus aquaticus), and the star-nosed mole (Condylura cristata). Each of these four closely related species lives in a unique ecological niche, exhibits a different repertoire of behaviors, and has a different configuration of **peripheral** sensory receptors. Corresponding specializations of cortical sensory areas reveal a number of ways in which the cortex has evolved in parallel with changes to the sensory periphery. These specializations include expansion of cortical representations (cortical magnification), the addition or loss of cortical areas in the processing network, and the subdivision of areas into modules (barrels and stripes).

L2 ANSWER 2 OF 24 MEDLINE
ACCESSION NUMBER: 2000235577 MEDLINE
DOCUMENT NUMBER: 20235577
TITLE: Spontaneous micronuclei in **peripheral** blood erythrocytes from 54 animal species (mammals, reptiles and birds): part two.
AUTHOR: Zuniga-Gonzalez G; Torres-Bugarin O; Luna-Aguirre J; Gonzalez-Rodriguez A; Zamora-Perez A; Gomez-Meda B C; Ventura-Aguilar A J; Ramos-Ibarra M L; Ramos-Mora A; Ortiz G G; Gallegos-Arreola M P
CORPORATE SOURCE: Laboratorio de Mutagenesis, Centro de Investigacion Biomedica de Occidente, I.M.S.S., Sierra Mojada #800, Colonia Independencia C.P. 44340, Guadalajara, Mexico.. mutagenesis96@hotmail.com
SOURCE: MUTATION RESEARCH, (2000 Apr 13) 467 (1) 99-103.
Journal code: NNA. ISSN: 0027-5107.
PUB. COUNTRY: Netherlands
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English

FILE SEGMENT: [redacted]iority Journals; Cancer Journal
ENTRY MONTH: [redacted]0007
ENTRY WEEK: 20000704
AB The normal numbers of micronucleated erythrocytes (MNE) observed in **peripheral** blood samples differ among species. This depends on the effectiveness of the spleen (or the rest of the reticuloendothelial system) to withdraw them from circulation. In our previous report, we assessed the number of MNE in the **peripheral** blood of 35 mammalian species. Here we show the results observed in 54 species including mammals, reptiles and birds. We obtained 212 **peripheral** blood samples from different species. In 14 species, only one individual was studied. Slides were stained with acridine orange. The total number of MNE (normo and polychromatic) in 10,000 erythrocytes per animal are shown.
The species that display the higher MNE were: ocelote, lynx, owl, gray squirrel, **hedgehog**, lion, orange fronted parakeet and common barn owl. For this reason, these species could be tested as monitors for genotoxic events.Another interesting observation was that in the gray squirrel, we found the highest values of MNE in the smaller (younger) animals when compared with the larger (older) of the same species.

L2 ANSWER 3 OF 24 MEDLINE
ACCESSION NUMBER: 2000147806 MEDLINE
DOCUMENT NUMBER: 20147806
TITLE: On the presence of ganglion cells in the intracranial portion of the accessory nerve (XI cranial nerve) in some mammals.
AUTHOR: Panu R; Bo Minelli L; Acone F; Gazza F; Cacchioli A; Botti M; Palmieri G
CORPORATE SOURCE: Institute of Normal Anatomy of Domestic Animals, Faculty of Veterinary Medicine, Parma, Italy.. rinopanu@unipr.it
SOURCE: ITALIAN JOURNAL OF ANATOMY AND EMBRYOLOGY, (1999 Oct-Dec) 104 (4) 185-94.
Journal code: CLB. ISSN: 1122-6714.
PUB. COUNTRY: Italy
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
ENTRY MONTH: 200005
ENTRY WEEK: 20000504
AB The intracranial tract of the accessory nerve (XI cranial nerve) was studied in some mammals (equines, domestic and wild ruminants, pig, carnivores, rabbit, nutria, guinea pig, hamster, **hedgehog**). The specimens were embedded in paraffin or paraplast, the sections were stained with cresyl violet, haematoxylin and eosin, or submitted to argentic impregnation. Pseudounipolar ganglion cells were found in all the mammals examined, with the exception of the cat. The number of cells and their variability in the different species and subjects were related. The topography and morphology of the cells were described. This comparative study has demonstrated that the accessory nerve is not a entirely motor nerve, but it is a mixed, motor and sensitive, nerve. Nevertheless, we think further studies are necessary in order to establish the **peripheral** distribution, the central pathway and the functional role of the pseudounipolar neurons found in the intracranial tract of the accessory nerve.

L2 ANSWER 4 OF 24 MEDLINE
ACCESSION NUMBER: 2000011113 MEDLINE
DOCUMENT NUMBER: 20011113
TITLE: Sonic **hedgehog** signaling during digit pattern duplication after application of recombinant protein and expressing cells.
AUTHOR: Wada N; Kawakami Y; Nohno T
CORPORATE SOURCE: Department of Molecular Biology, Kawasaki Medical School, Kurashiki Japan.
SOURCE: DEVELOPMENT GROWTH AND DIFFERENTIATION, (1999 Oct) 41 (5) 567-74.

Journal code: E7Y. ISSN: 0012-159[illegible]
PUB. COUNTRY: [illegible]pan
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200002
ENTRY WEEK: 20000204

AB HoxD expression and cartilage pattern formation were compared after application of a recombinant amino-terminal peptide of Sonic **hedgehog** protein (Shh-N) and implantation of cells expressing the Sonic **hedgehog** (Shh) gene. During digit duplication after implantation of a Shh-N-soaked bead, BMP-2 and Patched expression was transiently induced in the anterior limb mesenchyme 20 h after grafting, but was reduced to the basal level 48 h after grafting. On the contrary, when Shh-expressing cells were grafted to the anterior limb bud, expression domains of the BMP-2 and Patched genes were initially induced in the restricted region in close proximity to the grafted cells. Induced expression of BMP-2 and Patched was maintained in the anterior-**peripheral** region of the limb bud for 42 h after grafting. In either case, HoxD12 and HoxD13 were consistently induced in the anterior-distal limb mesenchyme, accompanying mirror-image duplication of the digit pattern. Induction and maintenance of HoxD expression were consistent with the resultant digit pattern. A steep gradient of Shh activity provided by Shh-expressing cells is most adequate to induce complete digit pattern, as compared to the shallow gradient provided by Shh-N protein released from a bead. These results suggest that positional identity is respecified by Shh-N activity within the first 24 h during digit duplication, and that Shh-N on its own is not acting as a long-range signaling molecule to determine positional identity at a distance in the limb bud.

L2 ANSWER 5 OF 24 MEDLINE
ACCESSION NUMBER: 1999456774 MEDLINE
DOCUMENT NUMBER: 99456774
TITLE: Flik, a chick follistatin-related gene, functions in gastrular dorsalisation/neural induction and in subsequent maintenance of midline Sonic **hedgehog** signalling.
AUTHOR: Towers P; Patel K; Withington S; Isaac A; Cooke J
CORPORATE SOURCE: Division of Developmental Neurobiology, National Institute for Medical Research, The Ridgeway, Mill Hill, London, NW7 1AA, United Kingdom.
SOURCE: DEVELOPMENTAL BIOLOGY, (1999 Oct 15) 214 (2) 298-317. Journal code: E7T. ISSN: 0012-1606.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals; Cancer Journals
OTHER SOURCE: GENBANK-AJ238977
ENTRY MONTH: 200001
ENTRY WEEK: 20000104

AB We have targetted the chick gene Flik with antisense oligodeoxynucleotide treatment at gastrular stages, when it is expressed in organiser-derived structures of the midline (K. Patel et al., 1996, Dev. Biol. 178, 327-342). A specific syndrome of deficient axial patterning and holoprosencephaly is produced. Most aspects of this syndrome can be understood as due to attenuation of dorsalising and neural-inducing signals during gastrulation, followed by failure to maintain the later signals from chordamesoderm/neural midline that pattern the mesodermal and neural cross sections during subsequent stages. Anatomical effects are first apparent at early neurula stages and correspond with what might be expected from a reduced counteraction of the ventralising Bone morphogenetic protein (BMP) pathway at the earlier stages, coupled with inadequate Sonic **hedgehog** (Shh) signalling subsequently. Delay in the clearing of BMP-4 RNA expression from the presumptive neural region at gastrulation is indeed seen, though chordin RNA expression within organiser derivatives remains normal. Subsequently, specific attenuation

of chordamesod[redacted] and neural midline Shh express[redacted]n is observed. Brief preincubation [redacted]stage 4 chick blastoderms in su[redacted]natant from Xenopus oocytes that have been injected with Flik RNA prolongs and enhances the competence of their **peripheral** epiblast to respond to neural inductive signals from grafted Hensen's nodes. This effect specifically mimics that recently observed using microg/ml solutions of recombinant Follistatin (D. J. Connolly et al., 1999, Int. J. Dev. Biol., in press), further suggesting that Flik protein might act in vivo by somehow modulating activity of signalling pathways through BMP or other TGFbeta-related ligands. We discuss the significance of the observations in relation to recent ideas about neural induction, about possible redundancy in gene action, and about subsequent patterning of the axial cross section, suggesting that a Flik function in autocrine/paracrine maintenance of later midline Shh signalling represents a role of the gene separate from that in primary dorsalisation/neural induction. Copyright 1999 Academic Press.

L2 ANSWER 6 OF 24 MEDLINE
ACCESSION NUMBER: 1999409964 MEDLINE
DOCUMENT NUMBER: 99409964
TITLE: Schwann cell-derived Desert **hedgehog** controls the development of **peripheral** nerve sheaths [see comments].
COMMENT: Comment in: Neuron 1999 Aug;23(4):627-9
AUTHOR: Parmantier E; Lynn B; Lawson D; Turmaine M; Namini S S; Chakrabarti L; McMahon A P; Jessen K R; Mirsky R
CORPORATE SOURCE: Department of Anatomy and Developmental Biology, University
College London, United Kingdom.
SOURCE: NEURON, (1999 Aug) 23 (4) 713-24.
Journal code: AN8. ISSN: 0896-6273.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199911
AB We show that Schwann cell-derived Desert **hedgehog** (Dhh) signals the formation of the connective tissue sheath around **peripheral** nerves. mRNAs for dhh and its receptor patched (ptc) are expressed in Schwann cells and perineural mesenchyme, respectively. In dhh-/- mice, epineurial collagen is reduced, while the perineurium is thin and disorganized, has patchy basal lamina, and fails to express connexin 43. Perineurial tight junctions are abnormal and allow the passage of proteins
and neutrophils. In nerve fibroblasts, Dhh upregulates ptc and **hedgehog**-interacting protein (hip). These experiments reveal a novel developmental signaling pathway between glia and mesenchymal connective tissue and demonstrate its molecular identity in **peripheral** nerve. They also show that Schwann cell-derived signals can act as important regulators of nerve development.

L2 ANSWER 7 OF 24 MEDLINE
ACCESSION NUMBER: 1999409952 MEDLINE
DOCUMENT NUMBER: 99409952
TITLE: Creating barriers: a new role for Schwann cells and Desert **hedgehog** [comment].
COMMENT: Comment on: Neuron 1999 Aug;23(4):713-24
AUTHOR: Salzer J L
CORPORATE SOURCE: Department of Cell Biology and Neurology, New York University Medical Center, New York 10016, USA.
SOURCE: NEURON, (1999 Aug) 23 (4) 627-9.
Journal code: AN8. ISSN: 0896-6273.
PUB. COUNTRY: United States
Commentary
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199911

L2 ANSWER 8 OF 24 MEDLINE
ACCESSION NUMBER: 99387969 MEDLINE
DOCUMENT NUMBER: 99387969
TITLE: Bmp signaling regulates proximal-distal differentiation of endoderm in mouse lung development.
AUTHOR: Weaver M; Yingling J M; Dunn N R; Bellusci S; Hogan B L
CORPORATE SOURCE: Howard Hughes Medical Institute, Department of Cell Biology, Nashville, TN, USA.
CONTRACT NUMBER: HD28955 (NICHD)
T32-HD07502 (NICHD)
SOURCE: DEVELOPMENT, (1999 Sep) 126 (18) 4005-15.
Journal code: ECW. ISSN: 0950-1991.
PUB. COUNTRY: ENGLAND: United Kingdom
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199912
ENTRY WEEK: 19991204
AB In the mature mouse lung, the proximal-distal (P-D) axis is delineated by two distinct epithelial subpopulations: the proximal bronchiolar epithelium and the distal respiratory epithelium. Little is known about the signaling molecules that pattern the lung along the P-D axis. One candidate is Bone Morphogenetic Protein 4 (Bmp4), which is expressed in a dynamic pattern in the epithelial cells in the tips of growing lung buds. Previous studies in which Bmp4 was overexpressed in the lung endoderm (Bellusci, S., Henderson, R., Winnier, G., Oikawa, T. and Hogan, B. L. M. (1996) Development 122, 1693-1702) suggested that this factor plays an important role in lung morphogenesis. To further investigate this question, two complementary approaches were utilized to inhibit Bmp signaling in vivo. The Bmp antagonist Xnoggin and, independently, a dominant negative Bmp receptor (dnAlk6), were overexpressed using the surfactant protein C (Sp-C) promoter/enhancer. Inhibiting Bmp signaling results in a severe reduction in distal epithelial cell types and a concurrent increase in proximal cell types, as indicated by morphology and expression of marker genes, including the proximally expressed hepatocyte nuclear factor/forkhead homologue 4 (Hfh4) and Clara cell marker CC10, and the distal marker Sp-C. In addition, electron microscopy demonstrates the presence of ciliated cells, a proximal cell type, in the most **peripheral** regions of the transgenic lungs. We propose a model in which Bmp4 is a component of an apical signaling center controlling P-D patterning. Endodermal cells at the periphery of the lung, which are exposed to high levels of Bmp4, maintain or adopt a distal character, while cells receiving little or no Bmp4 signal initiate a proximal differentiation program.

L2 ANSWER 9 OF 24 MEDLINE
ACCESSION NUMBER: 1999235153 MEDLINE
DOCUMENT NUMBER: 99235153
TITLE: The neurobiology of Schwann cells.
AUTHOR: Mirsky R; Jessen K R
CORPORATE SOURCE: Department of Anatomy and Developmental Biology, University College London, UK.. r.mirsky@ucl.ac.uk
SOURCE: BRAIN PATHOLOGY, (1999 Apr) 9 (2) 293-311. Ref: 179
Journal code: BYB. ISSN: 1015-6305.
PUB. COUNTRY: Switzerland
Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, ACADEMIC)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199908
AB This selective review of Schwann cell biology focuses on questions relating to the origins, development and differentiation of Schwann cells and the signals that control these processes. The importance of neuregulins and their receptors in controlling Schwann cell precursor survival and generation of Schwann cells, and the role of these molecules

in Schwann cell biology is addressed. The reciprocal signalling between **peripheral** glial cells and neurons in development and adult life revealed in recent years is highlighted, and the profound change in survival regulation from neuron-dependent Schwann cell precursors to adult Schwann cells that depend on autocrine survival signals is discussed. Besides providing neuronal and autocrine signals, Schwann cells signal to mesenchymal cells and influence the development of the connective tissue sheaths of **peripheral** nerves. The importance of Desert **Hedgehog** in this process is described. The control of gene expression during Schwann cell development and differentiation by transcription factors is reviewed. Knockout of Oct-6 and Krox-20 leads to delay or absence of myelination, and these results are related to morphological or physiological observations on knockout or mutation of myelin-related genes. Finally, the relationship between selected extracellular matrix components, integrins and the cytoskeleton is explored and related to disease.

L2 ANSWER 10 OF 24 MEDLINE
ACCESSION NUMBER: 1999065510 MEDLINE
DOCUMENT NUMBER: 99065510
TITLE: Expression of chicken fibroblast growth factor homologous factor (FHF)-1 and of differentially spliced isoforms of FHF-2 during development and involvement of FHF-2 in chicken limb development.
AUTHOR: Munoz-Sanjuan I; Simandl B K; Fallon J F; Nathans J
CORPORATE SOURCE: Department of Molecular Biology and Genetics, Department of Anatomy, University of Wisconsin, Madison, Wisconsin 53706, USA.
CONTRACT NUMBER: HD32551 (NICHD)
SOURCE: DEVELOPMENT, (1999 Jan) 126 (2) 409-21.
Journal code: ECW. ISSN: 0950-1991.
PUB. COUNTRY: ENGLAND: United Kingdom
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-AF108754; GENBANK-AF108757
ENTRY MONTH: 199905
ENTRY WEEK: 19990502
AB Members of the fibroblast growth factor (FGF) family have been identified as signaling molecules in a variety of developmental processes, including important roles in limb bud initiation, growth and patterning. This paper reports the cloning and characterization of the chicken orthologues of fibroblast growth factor homologous factors-1 and -2 (cFHF-1/cFGF-12 and cFHF-2/cFGF-13, respectively). We also describe the identification of a novel, conserved isoform of FHF-2 in chickens and mammals. This isoform arises by alternative splicing of the first exon of the FHF-2 gene and is predicted to encode a polypeptide with a distinct amino-terminus. Whole-mount in situ hybridization reveals restricted domains of expression of cFHF-1 and cFHF-2 in the developing neural tube, **peripheral** sensory ganglia and limb buds, and shows that the two cFHF-2 transcript isoforms are present in non-overlapping spatial distributions in the neural tube and adjacent structures. In the developing limbs, cFHF-1 is confined to the posterior mesoderm in an area that encompasses the zone of polarizing activity and cFHF-2 is confined to the distal anterior mesoderm in a region that largely overlaps the progress zone. Ectopic cFHF-2 expression is induced adjacent to grafts of cells expressing Sonic **Hedgehog** and the zone of cFHF-2 expression is expanded in talpid2 embryos. In the absence of the apical ectodermal ridge or in wingless or limbless mutant embryos, expression of cFHF-1 and cFHF-2 is lost from the limb bud. A role for cFHF-2 in the patterning and growth of skeletal elements is implied by the observation that engraftment of developing limb buds with QT6 cells expressing a cFHF-2 isoform that is normally expressed

in the limb lea[redacted] to a variety of morphological [redacted]fects. Finally, we show that a secrete[redacted]ersion of cFHF-2 activates the [redacted]ression of HoxD13, HoxD11, Fgf-4 and BMP-2 ectopically, consistent with cFHF-2 playing a role in anterior-posterior patterning of the limb.

L2 ANSWER 11 OF 24 MEDLINE
ACCESSION NUMBER: 1998370838 MEDLINE
DOCUMENT NUMBER: 98370838
TITLE: Bone formation via cartilage models: the "borderline" chondrocyte.
AUTHOR: Bianco P; Cancedda F D; Riminucci M; Cancedda R
CORPORATE SOURCE: Department of Experimental Medicine, University of Aquila, Italy.
SOURCE: MATRIX BIOLOGY, (1998 Jul) 17 (3) 185-92. Ref: 49
Journal code: B0T. ISSN: 0945-053X.
PUB. COUNTRY: GERMANY: Germany, Federal Republic of
Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199901
ENTRY WEEK: 19990104
AB Increasing evidence substantiates the view that death is not necessarily the only fate of hypertrophic chondrocytes and that, when exposed to the right microenvironment, these cells can further differentiate to osteoblast-like cells and contribute to initial bone formation. In vitro, when replated as adherent cells in the presence of ascorbic acid, hypertrophic chondrocytes resume cell proliferation, switch from the synthesis of the cartilage-characteristic type II and X collagens to the synthesis of type I collagen, and organize a mineralizing bone matrix. In vivo, expression of bone specific markers by growth plate chondrocytes occurs initially in early hypertrophic cells located at the mid-diaphysis and directly facing the osteogenic perichondrium. In bones formed via cartilage models, the first mineralized bone matrix (the earliest bony collar preceding vascular invasion and the onset of endochondral bone formation) is deposited at the outer aspect of the mid-diaphysis between rows of early hypertrophic chondrocytes and osteoblasts, which are arranged in a peculiar "vis `a vis" fashion. The "vis `a vis" organization of perichondrial osteogenic cells and **peripheral** early hypertrophic chondrocytes suggests that the latter cells are exposed -- compared to their cognate, the central hypertrophic chondrocytes -- to a specific microenvironment composed of unique matrix-originating signals and cellular cross-talks. A major role in the differentiation control of, and interaction between, hypertrophic chondrocytes and osteogenic perichondrial cells is certainly played by the Indian **Hedgehog** /PTHrP signalling system. We propose that all early hypertrophic chondrocytes have the inherent potential to differentiate to osteoblast-like cells and to contribute to initial bone formation, but that only chondrocytes positioned at the "borderland" between cartilage and (non-cartilage) osteogenic tissues undergo further differentiation to bone producing cells. We call these hypertrophic chondrocytes "borderline chondrocytes" to emphasize both their specific location and their dual differentiation potential. Hypertrophic chondrocytes located in different cartilage areas are exposed to an inappropriate matrix and endocrine/paracrine environment, cannot differentiate to osteoblast-like cells and therefore undergo apoptosis.

L2 ANSWER 12 OF 24 MEDLINE
ACCESSION NUMBER: 1998149401 MEDLINE
DOCUMENT NUMBER: 98149401
TITLE: Regional distribution of Sonic **Hedgehog**, patched, and smoothened mRNA in the adult rat brain.
AUTHOR: Traiffort E; Charytoniuk D A; Faure H; Ruat M
CORPORATE SOURCE: Laboratoire de Neurobiologie Cellulaire et Moleculaire, UPR
9040 du CNRS, Junior Group ATIPE, Gif sur Yvette, France.

SOURCE: JOURNAL OF NEUROCHEMISTRY, (1998 Mar) 70 (3) 1327-30.
Journal code: JAV. ISSN: 0022-30[redacted]
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199805
ENTRY WEEK: 19980502
AB In vertebrates, Sonic **Hedgehog** (Shh), Desert **Hedgehog** (Dhh), and Indian **Hedgehog** (Ihh) genes encode a family of morphogen proteins that are implicated in a wide range of signaling activities, particularly during embryonic development. These secreted proteins are proposed to mediate their effects on target cells by interacting with their putative receptor, Patched (Ptc), and with a seven-pass transmembrane protein, Smoothened (Smo). However, the roles that these signaling molecules may play in adult tissues, particularly in brain, are not yet clearly defined. Therefore, we investigated the expression of these genes in adult rat tissues. Northern blot analysis revealed expression of Shh, Dhh, and Ihh genes in **peripheral** tissues, whereas Shh transcript was also identified in brain. It is interesting that northern blot analysis with probes derived from the mouse Ptc and Smo genes revealed the expression of a 7.9-kb and a 3.7-kb transcript, respectively, in all brain tissues examined. In situ hybridization experiments using specific digoxigenin-labeled riboprobes showed expression of Ptc and Smo transcripts in discrete brain areas. Shh-positive cells were observed in restricted regions of the brain. Within the cerebellum, Shh, Ptc, and Smo transcripts were colocalized in the Purkinje cell layer. These data suggest that, besides its roles in determining cell fate and patterning during embryogenesis, the **hedgehog** signaling pathway may have also important roles in the adult brain.

L2 ANSWER 13 OF 24 MEDLINE
ACCESSION NUMBER: 1998104336 MEDLINE
DOCUMENT NUMBER: 98104336
TITLE: Generation of cell diversity in the **peripheral** autonomic nervous system: the sympathoadrenal cell lineage revisited.
AUTHOR: Unsicker K; Finotto S; Krieglstein K
CORPORATE SOURCE: Department of Anatomy and Cell Biology (Neuroanatomy), University of Heidelberg, Germany.
SOURCE: ANATOMISCHER ANZEIGER, (1997 Dec) 179 (6) 495-500. Ref: 48
Journal code: 4PE. ISSN: 0003-2786.
PUB. COUNTRY: GERMANY: Germany, Federal Republic of
Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199804
ENTRY WEEK: 19980404
AB Based on recent evidence from in vitro and gene knock-out/knock-in studies this short review summarizes the molecular scenario underlying the development of autonomic neurons from the neural crest. The focus is on the sympathoadrenal (SA) cell lineage. While migrating ventrally precursors of this cell lineage are exposed to signals from notochord/ventral neural tube probably including the protein sonic **hedgehog**. These and signals in the region of the dorsal aorta (members of the family of bone morphogenetic proteins), where SA progenitor cells subsequently assemble, are essential for the induction of the adrenergic phenotype. SA progenitor cells subsequently differentiate into paravertebral and prevertebral sympathetic neurons, intra- and extra-adrenal chromaffin cells and intermediate SIF (small intensely fluorescent) cells. Based on in vitro studies with isolated SA and chromaffin progenitor cells glucocorticoids have been claimed as essential

for suppressing neuronal commitment and channeling SA cells towards the chromaffin phenotype. Unexpectedly, mice deficient for a functional glucocorticoid receptor possess the full complement of adrenal chromaffin cells at birth. We present a hypothetical scenario consistent with these data, in which chromaffin cell development would be the default pathway in the SA cell lineage, while development into a neuronal direction requires specific growth factor signaling, which is probably distinct for paravertebral and prevertebral sympathetic neurons.

L2 ANSWER 14 OF 24 MEDLINE
ACCESSION NUMBER: 1998071576 MEDLINE
DOCUMENT NUMBER: 98071576
TITLE: [Activity of PMSF-inhibited carboxypeptidase in brain tissues and regions of the European **hedgehog** (Erinaceus europaeus)].
Aktivnost' PMSF-ingibiruemoi karboksipeptidazy v tkaniakh i otdelakh golovnogo mozga ezha evropeiskogo (Erinaceus europaeus).
AUTHOR: Vernigora A N; Shchetinina N V; Gengin M T
SOURCE: UKRAINSKII BIOKHIMICHESKII ZHURNAL, (1997 Jan-Feb) 69 (1) 87-9.
Journal code: WMJ. ISSN: 0201-8470.
PUB. COUNTRY: Ukraine
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: Russian
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199804
AB The activity of the PMSF-inhibited carboxypeptidase in different tissues and brain regions of Erinaceus europaeus has been studied. The highest PMSF-inhibited carboxypeptidase activity, has been discovered in the pituitary gland and in some **peripheral** tissues: tests, lung, kidney, adrenal gland, spleen. The PMSF-inhibited carboxypeptidase activity in the brain regions is approximately two folds as low in the **peripheral** tissues. The activity of PMSF-inhibited carboxypeptidase in the brain regions also is 3-4 fold as low as that in the pituitary gland. The PMSF-inhibited carboxypeptidase activity in brain regions rich for the neuron bodies is higher than that in the conduction paths. In skeletal muscle and in blood serum the PMSF-inhibited carboxypeptidase activity has not been found.

L2 ANSWER 15 OF 24 MEDLINE
ACCESSION NUMBER: 97325058 MEDLINE
DOCUMENT NUMBER: 97325058
TITLE: [Early stages of myogenesis as seen through the action of the myf-5 gene].
Les etapes precoces de la myogen`ese vues `a travers l'action du g`ene myf-5.
AUTHOR: Buckingham M
CORPORATE SOURCE: CNRS URA 1947, Departement de Biologie moleculaire, Institut Pasteur, Paris, France.
SOURCE: COMPTES RENDUS DES SEANCES DE LA SOCIETE DE BIOLOGIE ET DE SES FILIALES, (1997) 191 (1) 43-54.
Journal code: CA2. ISSN: 0037-9026.
PUB. COUNTRY: France
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: French
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199709
ENTRY WEEK: 19970904
AB Skeletal muscles in the vertebrate body are derived from the somites, epithelial spheres of cells which segment from the paraxial mesoderm in a rostral-caudal developmental gradient on either side of the neural tube. Initially, cells in the somite are multipotent and their fate depends on the environmental influences exerted by neighbouring tissues, notably the axial structures (neural tube and notochord), and the dorsal ectoderm. The

ventralizing influence exerted by the notochord and floor plate of the neural tube through the action of sonic **hedgehog** results in the differentiation of sclerotome which will give rise to cartilage and bone of the vertebral column and ribs. The dorsal derivatives of the somite, formed from cells in the dermomyotome, are derm and skeletal muscle. The onset of skeletal myogenesis is characterized by expression of myogenic factors, notably myf-5 and MyoD, members of the superfamily of helix-loop-helix transcription factors. Another member of the myogenic factor family, myogenin, is subsequently expressed and leads to muscle cell differentiation with activation of the downstream muscle-specific genes. Dorsalization of the somite and subsequent myogenesis depends on the presence of axial structures and dorsal ectoderm. The Wnt family of signalling molecules are potentially implicated in this process. Muscle progenitor cells present in the medial part of the dermomyotome activate myf-5 first and explant experiments have shown that the axial structures lead to the activation of this myogenic factor and subsequent myogenesis which results in the formation of the dorsal myotome in the central region of the somite. This contributes to the formation of axial muscles. Muscle progenitor cells in the lateral part of the dermomyotome preferentially activate MyoD and this depends on the presence of dorsal ectoderm. These cells will form the ventral aspect of the myotome, and later contribute to body wall muscles, for example. Part of the lateral progenitor population migrates away from the somite to form **peripheral** body muscles and the muscles of the limb. In this case myogenic factors are not initially expressed and these migratory cells are characterized by the expression of the paired-box gene Pax3. In explant experiments lateral mesoderm retards the induction of MyoD expression by dorsal ectoderm; in vivo this may be important to permit cell migration prior to differentiation. In mice carrying mutations in both MyoD and myf-5 no skeletal muscle forms, whereas myogenesis can take place in the absence of either MyoD or myf-5. Normally, cells in which one gene is activated first, subsequently co-express the other, so that there rapidly cease to be distinct MyoD+ or myf-5+ populations in the embryo. In myf-5-/- mice no myotome forms initially, but MyoD is subsequently activated. This takes place medially, as well as laterally, under the influence of the more mature neural tube and notochord. By targetting the myf-5 gene with an nlacZ reporter gene it has been possible to follow the fate of the early muscle progenitor cell population in which the myf-5 gene has been activated but no myf-5 protein is present. These beta-galactosidase positive cells delaminate from the dermomyotome, but instead of migrating under this epithelium to form the myotome, they migrate aberrantly. Some cells localize dorsally under the epiderm and begin to express the dermal marker, Dermo-1. Other muscle progenitor cells migrate ventrally into the sclerotomal compartment where they express an early sclerotomal marker, scleraxis. Later in the mutant mice, when cells from this compartment have condensed to form the cartilage of the ribs, beta-galactosidase positive cells are detectable within the ribs. These observations indicate that the early myogenic factor myf-5 is necessary to ensure the correct positioning of myogenic progenitor cells within the embryo. (ABSTRACT TRUNCATED)

L2 ANSWER 16 OF 24 MEDLINE
ACCESSION NUMBER: 97042058 MEDLINE
DOCUMENT NUMBER: 97042058
TITLE: msh may play a conserved role in dorsoventral patterning of the neuroectoderm and mesoderm.
AUTHOR: D'Alessio M; Frasch M
CORPORATE SOURCE: Brookdale Center for Molecular Biology, Mount Sinai School of Medicine, New York, NY 10029, USA.
SOURCE: MECHANISMS OF DEVELOPMENT, (1996 Aug) 58 (1-2) 217-31. Journal code: AXF. ISSN: 0925-4773.
PUB. COUNTRY: Ireland

Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-U33319; GENBANK-X85331
ENTRY MONTH: 199705
ENTRY WEEK: 19970502
AB Many of the mechanisms that govern the patterning of the Drosophila neuroectoderm and mesoderm are still unknown. Here we report the sequence, expression, and regulation of the homeobox gene msh, which is likely to play an important role in the early patterning events of these two tissue primordia. msh expression is first observed in late blastoderm embryos and occurs in longitudinal bands of cells that are fated to become lateral neuroectoderm. This expression is under the control of dorsoventral axis-determination genes and depends on dpp-mediated repression in the dorsal half of the embryo and on fib-(EGF-) mediated repression ventrally. The bands of msh expression define the cells that will form the lateral columns of proneural gene expression and give rise to the lateral row of SI neuroblasts. This suggests that msh may be one of the upstream regulators of the achaete-scute (AS-C) genes and may play a role that is analogous to that of the homeobox gene vnd/NK2 in the medial sector of the neuroectoderm. During neuroblast segregation, msh expression is maintained in a subset of neuroblasts, indicating that msh, like vnd/NK2, could function in both dorsoventral patterning of the neuroectoderm and neuroblast specification. The later phase of msh expression that occurs after the first wave of neuroblast segregation in defined ectodermal and mesodermal clusters of cells points to similar roles of msh in patterning and cell fate specification of the **peripheral** nervous system, dorsal musculature, and the fat body. A comparison of the expression patterns of the vertebrate homologs of msh, vnd/NK2, and AS-C genes reveals striking similarities in dorsoventral patterning of the Drosophila and vertebrate neuroectoderm and indicates that genetic circuitries in neural patterning are evolutionarily conserved.

L2 ANSWER 17 OF 24 MEDLINE
ACCESSION NUMBER: 91332195 MEDLINE
DOCUMENT NUMBER: 91332195
TITLE: Neuroglial arrangements in the olfactory glomeruli of the **hedgehog**.
AUTHOR: Valverde F; Lopez-Mascaraque L
CORPORATE SOURCE: Laboratorio de Neuroanatomia Comparada, Instituto Cajal (CSIC), Madrid, Spain..
SOURCE: JOURNAL OF COMPARATIVE NEUROLOGY, (1991 May 22) 307 (4) 658-74.
Journal code: HUV. ISSN: 0021-9967.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199111
AB The olfactory glomeruli represent morphological and functional units in which olfactory information is processed in specialized synaptic arrangements established between the central processes of sensory neurons, whose cell bodies are located in the olfactory epithelium, and the terminal (intraglomerular) portions of the dendrites of periglomerular, tufted, and mitral cells. The olfactory glomeruli are surrounded by distinctive glial formations in which the **peripheral** glia interacts with the central glia. We have studied the morphology and organization of neuroglial cells in the layer of olfactory nerves and the glomerular layer of the olfactory bulb in the insectivorous **hedgehog** (Erinaceus europaeus) with the electron microscope, Golgi method, and immunohistochemistry by using antibodies to glial fibrillary acidic protein (GFAP) and "rip," a monoclonal antibody that stains

oligodendrocytes and their processes in the rat (Friedman et al.: Glia 2:380-390, '89). The **peripheral** glia is represented by a special category of cells that are closely related to astrocytes and known as sheathing cells. They accompany olfactory axons to their entrance in the glomeruli where they interact with the central glia, represented by astrocytes and oligodendrocytes. The sheathing cells typically display indented nuclei and protoplasmic expansions forming laminar processes wrapping several axons together. Astrocytes surrounding the glomerular neuropil belong to the velate type. They display numerous sheet-like processes enveloping dendritic segments and periglomerular cell bodies. Oligodendrocytes were found surrounding the glomeruli and at the interstices separating different glomeruli. Myelinated dendritic segments and cell bodies were found surrounding the olfactory glomeruli. These myelin coverings probably derive from oligodendrocytes. Together with the astrocytic lamellar expansions, they provide a rigid structural support that contributes to the segregation of group of different cells while remaining relatively isolated from other influences at the periphery of the glomeruli.

L2 ANSWER 18 OF 24 MEDLINE
ACCESSION NUMBER: 87084120 MEDLINE
DOCUMENT NUMBER: 87084120
TITLE: Structure of the olfactory bulb of the **hedgehog** (Erinaceus europaeus): description of cell types in the granular layer.
AUTHOR: Lopez-Mascaraque L; De Carlos J A; Valverde F
SOURCE: JOURNAL OF COMPARATIVE NEUROLOGY, (1986 Nov 8) 253 (2) 135-52.
Journal code: HUV. ISSN: 0021-9967.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198704
AB The cytoarchitecture of the olfactory bulb and the cell types in the granular layer of adult hedgehogs have been studied with the Golgi method.

The mitral cell layer does not stand out as a monolayer as in most mammals; it is arranged as a diffuse stratum with mitral cells displaced into the external plexiform layer. The external plexiform layer is exceedingly thick and contains the branches of **peripheral** processes of granule cells and displaced mitral and tufted cells. The granular layer contains granule cells and varieties of short-axon cells. Among granule cells a type of cell with an elaborate system of protrusions close to the cell body has been found. Four main varieties of short-axon cells are described. These include cells with local or extended axons, according to the branching pattern of their axons inside the granular layer or extending into the external plexiform layer as well. Short-axon cells were also classified as cells with smooth and spinous dendrites. A variety of cell with smooth dendrites and elaborate axonal system reaching the periglomerular zone is described. This type of cell has been found frequently in the olfactory bulb of the **hedgehog**. In comparison to several other mammals, short-axon cells in the olfactory bulb of the **hedgehog** have been found to be particularly abundant and to have more complex axonal systems. It is suggested that some of them may represent inhibitory interneurons acting upon granule and periglomerular cells, playing an important role in the centrifugal pathway controlling the olfactory input.

L2 ANSWER 19 OF 24 MEDLINE
ACCESSION NUMBER: 81071916 MEDLINE
DOCUMENT NUMBER: 81071916
TITLE: [Cyclic activity of adrenal function and seasonal variations of cortisol **peripheral** metabolism in a hibernating mammal, the **hedgehog** (Erinaceus europaeus L.) (author's transl)].
Activite cyclique de la fonction corticosurrenalienne et

[redacted]riations saisonni`eres du metab[redacted]lisme peripherique du [redacted]rtisol chez un mammif`ere hibe[redacted]nt, le herisson (Erinaceus europaeus L.).

AUTHOR: Saboureau M; Bobet J P; Boissin J
SOURCE: JOURNAL DE PHYSIOLOGIE, (1980 Nov) 76 (6) 617-29.
Journal code: JRB. ISSN: 0021-7948.
PUB. COUNTRY: France
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: French
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198104

AB In the male **hedgehog** we have studied the nycthemeral and seasonal variations of plasma corticosteroids (cortisol and corticosterone) and different parameters (Half-life: t 1/2; apparent volume of distribution: VAD; Metabolic clearance rate: TCM; Production rate: TP) which characterize the metabolism of cortisol, the main corticosteroid in the **hedgehog**, and give and accurate representation of the cortico-adrenal gland activity. This study was done on unanesthetized animals, kept under natural climatic conditions and equipped with an arterial catheter which allowed blood to be sampled without visible disturbance. Plasma corticosteroids levels were measured at 4 h intervals over a period of 24 h, each month for one year. Monthly evolution of cortisol **peripheral** metabolism was studied on animals treated with dexamethasone, using a single injection of 3H-cortisol as a tracer after previous comparison with the continuous infusion technique. Plasma glucocorticosteroid levels show a marked nycthemeral rhythm from February to October : maximums are before sunset or during the first hours of the night and minimums are near sunrise. This nycthemeral cycle was not evident during November, December and January when the animals present many periods of torpor. The nycthemeral mean level of plasma corticosteroids (mean of 7 plasma sample concentrations determined over a period of 24 h) fluctuates during the year : corticosteroid levels are maximum in December, then decrease rapidly at the beginning of winter, stay at relatively low levels in spring and the increase which starts in summer becomes more pronounced in autumn. Cortisol **peripheral** metabolism shows large seasonal variations characterized by a strong reduction in autumn during hibernation, a large increase at the end of winter when the seasonal rhythm of locomotor activity is being restored, and then a gradual decrease in spring and summer which is interrupted by a brief increase in July. The seasonal change in corticoadrenal gland cortisol production rate is polyphasic and shows a maximum rise in autumn (December) and two other peaks which occur at the end of winter and in summer. In light of this it appears that in autumn and winter, the cortisol production rate and cortisol metabolic clearance rate are in opposite phase. The important changes observed during July (increases of t 1/2, VAD, TCM and TP) are probably connected to the metabolic preparation for the autumnal and winter rest.

L2 ANSWER 20 OF 24 MEDLINE
ACCESSION NUMBER: 81035349 MEDLINE
DOCUMENT NUMBER: 81035349
TITLE: Accessory nerve fibres in simple sensory corpuscles in the **hedgehog**.
AUTHOR: Malinovsky L; Pac L
SOURCE: ZEITSCHRIFT FUR MIKROSKOPISCH-ANATOMISCHE FORSCHUNG, (1980)
94 (1) 81-95.
Journal code: XYA. ISSN: 0044-3107.
PUB. COUNTRY: GERMANY, EAST: German Democratic Republic
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198102

AB Studying the ultrastructure of simple sensory corpuscles in the glabrous skin in the **hedgehog** snout the authors followed the accessory nerve fibres in the examined corpuscles. The accessory nerve fibres were divided into four groups: a) The accessory nerve fibres containing accumulated mitochondria in the inner core. Here the fibres were situated

among the **peri[redacted]ral** lamellae of the inner core [redacted]th which they are occasional[redacted]joined though desmosomes. b) T[redacted]accessory nerve fibre in the inner core containing more light vesicles but lacking completely mitochondria. c) The accessory nerve fibre rich in mitochondria between the inner core and the capsule. d) The bundle of nerve fibres among the capsular lamellae. This bundle included a fibre rich in mitochondria, the other fibres contained mitochondria sporadically. There were nor vesicles at all. The authors are of the view that the fibres of groups a), c), and d) are sensory fibres including the fibres in group d) containing sporadic mitochondria. For the time being it is not quite clear wheather the accessory fibre in the inner core is independent from the very beginning or whether it is a branch of the central axon. The nature of the fibre of group b) rich in vesicles is not quite clear. With respect to the fact that the material was fixed in glutaraldehyde the findings will have to be completed by further material fixed in potassium permanganate or by enzymatic examination. Further examinations will also be inevitable to determine a possible functon of accessory fibres in the sensory terminal.

L2 ANSWER 21 OF 24 MEDLINE
ACCESSION NUMBER: 78165255 MEDLINE
DOCUMENT NUMBER: 78165255
TITLE: [Comparative morphologic features of the retinas of insectivores and primates]. Sravnitel'no-morfologicheskie osobennosti setchatki nasekomoiadnykh i primatov.
AUTHOR: Ozhigova A P
SOURCE: ARKHIV ANATOMII, GISTOLOGII I EMBRIOLOGII, (1978) 74 (3) 61-7. Journal code: 8NS. ISSN: 0004-1947.
PUB. COUNTRY: USSR
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: Russian
FILE SEGMENT: Priority Journals
ENTRY MONTH: 197808
AB By means of scanning electron microscopy and by neurohistological methods with subsequent quantitative treatment of the data, it is demonstrated that the retina of the **hedgehog** differs from that of the green monkey. In the former, the density of photoreceptors convergence is higher, that corresponds to the night mode of life of the **hedgehog** Monotony in the cells of all the layers, lack of photoreceptor differentiation according to the form of their external segments corresponds to general low level in the organization of the **hedgehog** nervous system. The retina of the **hedgehog** possessing the above mentioned structural peculiarities can be considered as a model reflecting the organization in the **peripheral** portion of the optic analyzer of the original forms in Mammalia placentalia.

=> s hedghog and neuron?

3 HEDGHOG
239165 NEURON?
L4 0 HEDGHOG AND NEURON?

=> s hedgehog and neuron?

1596 HEDGEHOG
239165 NEURON?
L5 218 HEDGEHOG AND NEURON?

=> s l5 and py <1994

8946689 PY <1994
L6 61 L5 AND PY <1994

=> s l6 and Erinaceus

280 ERINACEUS
L7 19 L6 AND ERINACEUS

=> s Erinaceus

L8 280 ERINACEUS

=> s l6 not l7

L9 42 L6 NOT L7

=> d ibib abs 1-42

L9 ANSWER 1 OF 42 MEDLINE
ACCESSION NUMBER: 94055510 MEDLINE
DOCUMENT NUMBER: 94055510
TITLE: Tectal and related target areas of spinal and dorsal column
nuclear projections in **hedgehog** tenrecs.
AUTHOR: Kunzle H
CORPORATE SOURCE: Institute of Anatomy, University of Munich, Germany..
SOURCE: SOMATOSENSORY AND MOTOR RESEARCH, **(1993)** 10 (3) 339-53.
Journal code: ZZZ. ISSN: 0899-0220.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199402
AB The terminal distributions of spinal and dorsal column nuclear projections
to tectum, pretectum, and central gray of **hedgehog** tenrecs (Echinops telfairi and Setifer setosus) were investigated using anterograde axonal flow and various tracer substances. In the inferior colliculus, the densest and most extensive mesencephalic projections were found within the pericentral regions. One target area, referred to as the external portion of the inferior colliculus, was represented as a semicircle of grain patches lateral and caudal to the central nucleus. This region received somesthetic afferents from the dorsal column nuclei and from spinal segments at various levels. In contrast, after high cervical injections, the pericentral portion dorsomedial to the rostral half of the central nucleus was labeled almost exclusively. This area of labeling was distinct from the labeling in the central gray and might be best compared with the intercollicular zone in other species. The superior
colliculus received projections predominantly from the high cervical cord;
minor projections also arose from lumbar spinal segments and the dorsal column nuclei. The terminal field covered roughly the caudal half of the colliculus and involved the stratum griseum intermediale in a patch-like fashion. Some labeling was also found in the stratum griseum profundum and
in the stratum griseum superficiale. Other than in the colliculi, weak pretectal projections were observed following dorsal column nuclear injections, while the nucleus of Darkschewitsch was labeled best following
lumbosacral injections. All mesencephalic target areas were labeled consistently on the contralateral side, while their ipsilateral side was involved to a varying degree: The relatively most prominent ipsilateral labeling was seen in the central gray, being roughly similar on both sides; scarcely any labeling was noted in the ipsilateral superior colliculus. Tectal injections of retrograde tracer, in addition, revealed a considerable number of labeled **neurons** in a relatively cell-poor region immediately ventral to the high cervical dorsal horn. This region might correspond to the lateral cervical nucleus, an aggregation of **neurons** that so far has only been demonstrated in higher mammals.

L9 ANSWER 2 OF 42 MEDLINE
ACCESSION NUMBER: 93199849 MEDLINE
DOCUMENT NUMBER: 93199849
TITLE: Two components of the pineal organ in the mink (Mustela vison): their structural similarity to submammalian pineal complexes and calcification.
AUTHOR: Vigh B; Vigh-Teichmann I
CORPORATE SOURCE: Second Department of Anatomy, Histology and Embryology, Semmelweis University Medical School, Budapest, Hungary.
SOURCE: ARCHIVES OF HISTOLOGY AND CYTOLOGY, **(1992 Dec)** 55 (5) 477-89.
Journal code: ARO. ISSN: 0914-9465.
PUB. COUNTRY: Japan
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199306
AB The pineal complex in the mink (Mustela vison) consists of a larger ventral and a smaller dorsal pineal. Both organs contain pinealocytes, **neurons**, glial cells, nerve fibers and synapses in an organization characteristic of nervous tissue. The cellular elements are arranged circularly around strait lumina. These lumina correspond to the photoreceptor spaces of submammalian pineals. A 9 + 0-type cilium marks the receptory pole of the pinealocytes which may form an inner-segment-like dendrite terminal in the pineal lumina. The cilia correspond to outer segments which form photoreceptor membrane multiplications in the pineal of submammalians and in certain insectivorous and mustelid mammals (bat, **hedgehog**, ferret). Axonal processes of the pinealocytes contain synaptic ribbons and terminate on intrapineal **neurons** of both organs. This pattern represents a neural efferentation of the pineal nervous tissue. The axonal processes of pinealocytes also form neurohormonal endings which pierce the perivascular limiting glial membrane in the ventral as well as in the dorsal pineal. The upper pineal ("epipineal") of the mink may correspond to the parapineal, frontal, or parietal organs of submammalian pineal complexes. Both pineals are encapsulated by the meningeal tissue of the brain stem. Afferent vasomotor axons of the meninges innervate smooth muscle cells of pineal arterioles. There are corpora arenacea in the pineal arachnoid and in the pineal nervous tissue, primarily in the ventral pineal. The localization of calcium ions detected around the membrane of pineal cells by pyroantimonate cytochemistry suggests membrane activity as the source of the calcium ions. The accumulation of calcium by the pinealocytes may be due to their neurosensory character. The mink is the first animal described to have both intrapineal and meningeal concrements like the human pineal.

L9 ANSWER 3 OF 42 MEDLINE
ACCESSION NUMBER: 93084544 MEDLINE
DOCUMENT NUMBER: 93084544
TITLE: Cytoarchitectonic and quantitative Golgi study of the **hedgehog** supraoptic nucleus.
AUTHOR: Caminero A A; Machin C; Sanchez-Toscano F
CORPORATE SOURCE: Departamento de Psicobiologia, Universidad Nacional de Educacion a Distancia, Madrid, Spain..
SOURCE: JOURNAL OF ANATOMY, **(1992 Feb)** 180 (Pt 1) 31-9.
Journal code: HBB. ISSN: 0021-8782.
PUB. COUNTRY: ENGLAND: United Kingdom
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199303
AB A cytoarchitectural study was made of the supraoptic nucleus (SON) of the **hedgehog** with special attention to the quantitative comparison of its main **neuronal** types. The main purposes were (1) to relate

the characteristics of this nucleus in the **hedgehog** (a primitive mammalian insectivorous brain) with those in the SONs of more evolutionarily advanced species; (2) to identify quantitatively the dendritic fields of the main **neuronal** types in the **hedgehog** SON and to study their synaptic connectivity. From a descriptive standpoint, 3 **neuronal** types were found with respect to the number of dendritic stems arising from the **neuronal** soma: bipolar **neurons** (48%), multipolar **neurons** (45.5%) and monopolar **neurons** (6.5%). Within the multipolar type 2 subtypes could be distinguished, taking into account the number of dendritic spines: (a) with few spines (93%) and (b) very spiny (7%). These results indicate that the **hedgehog** SON is similar to that in other species except for the very spiny **neurons**, the significance of which is discussed. In order to characterise the main types more satisfactorily (bipolar and multipolars with few spines) we undertook a quantitative Golgi study of their dendritic fields. Although the patterns of the dendritic field are similar in both **neuronal** types, the differences in the location of their connectivity can reflect functional changes and alterations in relation to the synaptic afferences.

L9 ANSWER 4 OF 42 MEDLINE
ACCESSION NUMBER: 93033884 MEDLINE
DOCUMENT NUMBER: 93033884
TITLE: Distribution of cortical **neurons** projecting to dorsal column nuclear complex and spinal cord in the **hedgehog** tenrec, Echinops telfairi.
AUTHOR: Kunzle H; Rehkamper G
CORPORATE SOURCE: Institute of Anatomy, University of Munich, Germany..
SOURCE: SOMATOSENSORY AND MOTOR RESEARCH, **(1992)** 9 (3) 185-97.
Journal code: ZZZ. ISSN: 0899-0220.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199301
AB Using retrograde axonal flow and wheatgerm agglutinin conjugated to horseradish peroxidase, we studied the distribution of cortical **neurons** giving rise to spinal and dorsal column nuclear projections, and correlated the regions involved in the projections with the cytoarchitectonic areas recently identified in the lesser **hedgehog** tenrec, Echinops telfairi (Insectivora). Labeled cortical **neurons** were most numerous following injections of tracer into higher cervical segments, whereas almost none were found following thoracic injections. The cortical labeling appeared more prominent ipsilaterally than contralaterally after spinal injections, although it was more prominent on the contralateral side after injection into the dorsal column nuclear complex. The majority of labeled **neurons** found in lamina V occupied the neocortex adjacent to the interhemispheric fissure along the rostrocaudal extent of the small corpus callosum. This location corresponded to an intermediate rostrocaudal portion of the hemisphere, and particularly to area 2 of Rehkamper. In some cases, adjacent portions of areas 1 and 3 were also involved, as well as neocortical regions of the lateral hemisphere. The present data did not suggest a somatotopic organization of the projections; likewise, evidence for the presence of more than one somatosensorimotor representation was sparse.

L9 ANSWER 5 OF 42 MEDLINE
ACCESSION NUMBER: 93029416 MEDLINE
DOCUMENT NUMBER: 93029416
TITLE: Cytochemistry of CSF-contacting **neurons** and pinealocytes.
AUTHOR: Vigh B; Vigh-Teichmann I
CORPORATE SOURCE: 2nd Department of Anatomy, Semmelweis University Medical School, Budapest, Hungary.
SOURCE: PROGRESS IN BRAIN RESEARCH, **(1992)** 91 299-306.
Ref: 21
Journal code: Q0B. ISSN: 0079-6123.

PUB. COUNTRY: [redacted]therlands
[redacted]urnal; Article; (JOURNAL ARTIC
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LANGUAGE: English
ENTRY MONTH: 199301
AB Gamma aminobutyric acid (GABA)-immunoreactive **neurons** of the paraventricular organ of the bony fish Coregonus albus send dendrites into the third ventricle. Their axons run to the synaptic zone of the infundibular lobe. The dendrites may take up some chemical information from the third ventricle, while the axons communicate it to the neuropil of the hypothalamus perhaps to modify its activity according to the state of the CSF. Serotonin-immunoreactive CSF-contacting **neurons** in the spinal cord of the hagfish Myxine glutinosa from dendrite terminals in the central canal and bear stereocilia like known mechanoreceptors. The Reissner's fiber runs above the stereocilia and flows out from the central canal through its caudal opening. Possibly, the fiber keeps open this aperture and ensures the flow of the CSF, which may serve as a mechanoreceptory input for the CSF-contacting **neurons**. In the pineal recess of **hedgehog**, CSF-contacting pinealocytes develop enlarged cilia corresponding to the photoreceptor outer segments of submammalian pinealocytes. Potassium pyroantimonate cytochemistry shows a similar localization of calcium ions in the mammalian pinealocyte as in the submammalian photoreceptor ones. Pineal calcifications are present in some birds (goose, duck) and may be connected to the photoreceptory Ca-exchange of the pineal organ. Axonic processes of pinealocytes form synapses on secondary **neurons** in mammals (**hedgehog**, rat, cat). Such **neurons** are also present in human pineals. Axons of these **neurons** constitute a pinealofugal pathway. In the cat, some of the intrinsic pineal **neurons** are GABA-immunoreactive, they form axodendritic and axo-axonic synapses (inhibitory?) on immunonegative **neurons** and pinealocytes, respectively.(ABSTRACT TRUNCATED AT 250 WORDS)

L9 ANSWER 6 OF 42 MEDLINE
ACCESSION NUMBER: 92386284 MEDLINE
DOCUMENT NUMBER: 92386284
TITLE: Neuropeptide Y-like immunoreactive **neurons** in the suprachiasmatic-subparaventricular region in the **hedgehog**-tenrec.
AUTHOR: Kunzle H; Unger J W
CORPORATE SOURCE: Institute of Anatomy, University of Munich, FRG..
SOURCE: BRAIN RESEARCH, **(1992 Apr 3)** 576 (2) 332-6.
Journal code: B5L. ISSN: 0006-8993.
PUB. COUNTRY: Netherlands
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199212
AB The distribution of the neuropeptide Y (NPY) was studied in geniculate and peri-chiasmatic regions in the lesser **hedgehog**-tenrec, Echinops telfairi (Insectivora). Only few **neurons** demonstrated NPY-like immunoreactivity in the ventral lateral geniculate nucleus. In contrast, NPY-immunoreactive perikarya were clearly present in the suprachiasmatic nucleus (SCh) and dorsal and caudal to it. The latter region might correspond to the subparaventricular zone (SPV), recently identified in the rat as an additional area involved in processing circadian rhythms. While the distribution of a distinct cell population across nuclear boundries in both SCh and SPV might conform to the present idea of processing circadian rhythms, the presence of NPY-like immunoreactive **neurons** in these areas is rather unusual. In mammals, such **neurons** have only been demonstrated so far in the mentioned insectivore as well as in man.

L9 ANSWER 7 OF 42 MEDLINE

ACCESSION NUMBER: [redacted]361329 MEDLINE
DOCUMENT NUMBER: [redacted]361329
TITLE: Bilateral thalamocortical projection in hedgehogs: evolutionary implications.
AUTHOR: Regidor J; Divac I
CORPORATE SOURCE: Department of Morphology, University of Las Palmas in Gran Canaria, Spain..
SOURCE: BRAIN, BEHAVIOR AND EVOLUTION, **(1992)** 39 (5) 265-9.
Journal code: B5G. ISSN: 0006-8977.
PUB. COUNTRY: Switzerland
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199211

AB In adult hedgehogs with large unilateral cortical deposits of fluorescent somatopetal tracers, labelled perikarya were found not only in the ipsilateral but also contralateral thalamus. An exceptionally large number of contralaterally labelled **neurons** was seen in the ventrolateral nucleus, also at a considerable distance from the midline. Deposits of one of two different tracers in the frontoparietal cortex of each hemisphere appear to label different perikarya in each ventrolateral nucleus. This projection to the contralateral cortex in hedgehogs does not resemble thalamo-cortical connections in either adult or developing brains of other mammalian species. Among amniotes, only in pigeons have contralateral projections from the thalamus to the telencephalon been described. The somatosensorimotor system of hedgehogs may be the only known mammalian remnant of primitive vertebrate thalamocortical organization. Whether primitive or derived, the bilateral thalamocortical projection in hedgehogs shows that **hedgehog** brains cannot be uncritically taken to represent brains of primate ancestors.

L9 ANSWER 8 OF 42 MEDLINE
ACCESSION NUMBER: 92297974 MEDLINE
DOCUMENT NUMBER: 92297974
TITLE: Immunocytochemistry and calcium cytochemistry of the mammalian pineal organ: a comparison with retina and submammalian pineal organs.
AUTHOR: Vigh-Teichmann I; Vigh B
CORPORATE SOURCE: Neuroendocrine Section, Hungarian Academy of Sciences, Semmelweis University Medical School, Budapest.
SOURCE: MICROSCOPY RESEARCH AND TECHNIQUE, **(1992 May 1)** 21 (3) 227-41. Ref: 141
Journal code: BAG. ISSN: 1059-910X.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, ACADEMIC)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199209

AB Morphologically the mammalian pineal organ is a part of the diencephalon. It represents a neural tissue histologically ("pineal nervous tissue") and is dissimilar to endocrine glands. Submammalian pinealocytes resemble the photoreceptor cells of the retina, and some of their cytologic characteristics are preserved in the mammalian pinealocytes together with compounds demonstrable by cyto- and immunocytochemistry and participating in photochemical transduction. In our opinion, the main trend of today's literature on pineal functions--only considering the organ as a common endocrine gland--deviates from this structural and histochemical basis. In mammals, similar to the lower vertebrates, the pinealocytes have a sensory cilium developed to a different extent. The axonic processes of pinealocytes form ribbon-containing synapses on secondary pineal

neurons, and/o[redacted]eurohormonal terminals on the b[redacted]al lamina of the surface of the [redacted]neal nervous tissue facing the [redacted]rivascular spaces. Ribbon-containing axo-dendritic synapses were found in the rat, cat, guinea pig, ferret, and **hedgehog**. In the cat, we found GABA-immunoreactive interneurons, while the secondary nerve cells, whose axons enter the habenular commissure, were GABA-immunonegative. GABA-immunogold-labeled axons run between pinealocytes and form axo-dendritic synapses on intrapineal **neurons**. There is a similarity between the light and electron microscopic localization of Ca ions in the mammalian and submammalian pineal organs and retina of various vertebrates. Calcium pyroantimonate deposits--showing the presence of Ca ions--were found in the outer segments of the pineal and retinal photoreceptors of the frog. In the rat and human pineal organ, calcium accumulated on the plasmalemma of pinealocytes and intercellularly among pinealocytes. The formation of pineal concrements in mammals may be connected to the high need for Ca exchange of the pinealocytes for their supposed receptor and effector functions.

L9 ANSWER 9 OF 42 MEDLINE
ACCESSION NUMBER: 92143289 MEDLINE
DOCUMENT NUMBER: 92143289
TITLE: Meso-diencephalic regions projecting to spinal cord and dorsal column nuclear complex in the **hedgehog** -tenrec, Echinops telfairi.
AUTHOR: Kunzle H
CORPORATE SOURCE: Anatomische Anstalt, Universitat Munchen, Federal Republic of Germany..
SOURCE: ANATOMY AND EMBRYOLOGY, **(1992)** 185 (1) 57-68. Journal code: 4PK. ISSN: 0340-2061.
PUB. COUNTRY: GERMANY: Germany, Federal Republic of
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199205
AB The distribution of **neurons** projecting to the spinal cord and dorsal column nuclear complex was investigated in the mesodiencephalic regions of the lesser **hedgehog**-tenrec, Echinops telfairi (Insectivora) by using the retrograde flow technique. While only few **neurons** projected to the dorsal column nuclear complex, numerous cells were found to give rise to spinal projections. Rubro-spinal **neurons** of various sizes were distributed over the entire rostrocaudal extent of the contra-lateral nucleus; a few **neurons** were also located ipsilaterally, Unlike that of the opossum, the projection appeared to be somatotopically organised. Interstitio-spinal **neurons** were differentiated into several subpopulations according to their location and laterality of projection. In the ipsilateral periventricular grey, in addition, there was a distinct population of cells possibly corresponding to the nucleus of Darkschewitsch. The mesencephalic central grey contained relatively few labeled **neurons**, the great majority of them being mesencephalic trigeminal, ectopic cuneiform or midline cells. Labeled cuneiform and midline cells, on the other hand, were quite numerous, extending both from a level just caudal to the trochlear nucleus to levels far beyond the rostral tip of the somatic oculomotor nucleus. The discrepancy between the poorly differentiated oculomotor nuclei and the apparently well-developed Edinger-Westphal complex is discussed. Hypothalamo-spinal **neurons** were essentially restricted to dorsal regions: the hypothalamic paraventricular nucleus (PAV), the dorso-medial (DmHy) and dorso-intermediate cell groups as well as the lateral hypothalamic zone. The latter two cell groups were bilaterally labeled, while the labeled **neurons** in DmHy and PAV were located predominantly ipsilaterally. Labeled **neurons** in the amygdala, colliculus superior and mesencephalic trigeminal nucleus were only found following cervical injections; all other mentioned areas and the posterior commissure complex projected to, at least, midthoracic level.

L9 ANSWER 10 OF 4[redacted] MEDLINE
ACCESSION NUMBER: 91121349 MEDLINE
DOCUMENT NUMBER: 91121349
TITLE: Auditory cortex of the long-eared **hedgehog** (Hemiechinus auritus). I. Boundaries and frequency representation.
AUTHOR: Batzri-Izraeli R; Kelly J B; Glendenning K K; Masterton R B; Wollberg Z
CORPORATE SOURCE: Department of Zoology, George S. Wise Faculty of Life Sciences, Tel Aviv University, Israel..
SOURCE: BRAIN, BEHAVIOR AND EVOLUTION, **(1990)** 36 (4) 237-48.
Journal code: B5G. ISSN: 0006-8977.
PUB. COUNTRY: Switzerland
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199105
AB The boundaries of the primary auditory cortex of the long-eared **hedgehog**, Hemiechinus auritus, were determined by single-cell recordings, myeloarchitecture and retrograde horseradish peroxidase labeling in the medial geniculate, using anesthetized animals. The auditory cortex is located on the lateral surface of the temporal cortex, medial to the rhinal fissure. Responses to pure tones revealed an orderly representation of best frequencies in the primary auditory cortex, with low frequencies represented rostrally and high frequencies caudally. A second auditory field caudal to the primary one was indicated.

L9 ANSWER 11 OF 42 MEDLINE
ACCESSION NUMBER: 91036141 MEDLINE
DOCUMENT NUMBER: 91036141
TITLE: Auditory brainstem in the mole (Mogera): nuclear configurations and the projections to the inferior colliculus.
AUTHOR: Kudo M; Nakamura Y; Tokuno H; Kitao Y
CORPORATE SOURCE: Department of Anatomy, School of Medicine, Kanazawa University, Japan..
SOURCE: JOURNAL OF COMPARATIVE NEUROLOGY, **(1990 Aug 22)** 298 (4) 400-12.
Journal code: HUV. ISSN: 0021-9967.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199102
AB Anatomical organization of the central auditory system in the mole was studied at the lower brainstem levels. The cyto-, myelo-, and chemoarchitectures were examined in Nissl, myelin, and acetylcholinesterase stained materials, and then the origins of the ascending afferents to the inferior colliculus (IC) were identified by injecting wheatgerm agglutinin conjugated to horseradish peroxidase (WGA-HRP) into the unilateral IC and processing the tissue according to the standard retrograde tracing techniques. The results indicate that the auditory nuclei and pathways in the lower brainstem of the mole conform to the basic plan common to many other mammals. Nevertheless, several characteristic features are evidenced in the present study: (1) in the cochlear nucleus (CochN), granule cell fields are very large in both the ventral (VCN) and dorsal (DCN) nuclei; among several populations of **neurons**, fusiform cells in the DCN, multipolar cells in the VCN and DCN, and small spherical cells in the VCN project to the IC directly, (2) in the superior olivary complex (SOC), the medial nucleus (MSO) is well developed in comparison with that in the **hedgehog**, the opossum, the mouse, and the rat, although the general configuration of the SOC is similar to that in those mammals, most strikingly, the MSO projects to the IC bilaterally in the mole, and (3) the nuclei of the lateral

lemniscus (NLL) show a great development and consist of three well-differentiated parts of the dorsal, intermediate, and ventral nuclei.

The projections from these subnuclei to the IC conform to the basic mammalian plan.

L9 ANSWER 12 OF 42 MEDLINE
ACCESSION NUMBER: 90015677 MEDLINE
DOCUMENT NUMBER: 90015677
TITLE: **Neuronal** plasticity in the **hedgehog** supraoptic nucleus during hibernation.
AUTHOR: Sanchez-Toscano F; Caminero A A; Machin C; Abella G
CORPORATE SOURCE: Departamento de Biologia Celular, Facultad de Biologia, Universidad Complutense, Madrid, Spain..
SOURCE: NEUROSCIENCE, **(1989)** 31 (2) 543-50.
Journal code: NZR. ISSN: 0306-4522.
PUB. COUNTRY: ENGLAND: United Kingdom
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199001
AB The purpose of the present study was to identify processes of plasticity in the receptive field of neurosecretory **neurons** of the supraoptic nucleus during hibernation in the **hedgehog**, in order to correlate them with the increased neurosecretory activity observed in this nucleus during this annual period. Using the Rapid Golgi method, a quantitative study was conducted in the receptive field of bipolar and multipolar **neurons** (the main components of the nucleus). Results indicate a generalized increase in the following characteristics: (1) number of dendritic spines per millimeter along the dendritic shafts; (2) degree of branching in the dendritic field; and (3) dendritic density around the **neuronal** soma. These data demonstrate modification of the dendritic field in the supraoptic nucleus during hibernation, a change undoubtedly related to functional conditions. Since the observed changes affect structures such as dendritic spines which are directly related to the arrival of neural afferences, the discussion is centered on the types of stimuli which may be responsible for the observed processes.

L9 ANSWER 13 OF 42 MEDLINE
ACCESSION NUMBER: 89327582 MEDLINE
DOCUMENT NUMBER: 89327582
TITLE: Aggregations of granule cells in the basal forebrain (islands of Calleja): Golgi and cytoarchitectonic study in different mammals, including man.
AUTHOR: Meyer G; Gonzalez-Hernandez T; Carrillo-Padilla F; Ferres-Torres R
CORPORATE SOURCE: Departmento de Anatomia, Facultad de Medicina, Universidad de La Laguna, Spain..
SOURCE: JOURNAL OF COMPARATIVE NEUROLOGY, **(1989 Jun 15)** 284 (3) 405-28.
Journal code: HUV. ISSN: 0021-9967.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198911
AB The granule cell islands in the olfactory tubercle (islands of Calleja) and the insula magna of Calleja are present in all species examined in this study: cat, rat, mouse, rabbit, **hedgehog**, monkey, man, and dolphin, displaying the same basic morphology. They appear as rather undifferentiated **neurons** with a poorly developed dendritic tree and a short unramified axon that does not leave the island. The larger islands and the insula magna are associated with medium-sized **neurons** often lying in cell-sparse core regions; they probably represent the efferent component of the islands. The distribution of granule cell islands in the olfactory tubercle varies from species to species: in the cat, they are restricted to the superficial cap regions; in the **hedgehog** and rabbit, they lie in cap regions and in the

deep polymorph layer. In the rat, they are confined mainly to the deep polymorph layer whereas in the mouse they extend through the three layers. In most species, the lateral islands form part of the cap regions, and they may receive fibers from the lateral olfactory tract. However, the consistent relationship between dwarf cells in the cap regions and granule cells seems to be a merely topographical one. The variable location of granule cell islands indicates that they are not related to specific cell types or cell groups in the olfactory tubercle, except to the large **neurons** in the hilus zones, which send their dendrites into the islands. Another close and constant relationship exists between granule islands and fibers of the medial forebrain bundle. The medial islands and the insula magna are the largest and most constant aggregations of granule cells. They are present even in the dolphin, which lacks lateral islands. Medial islands and insula magna are continuous in the **hedgehog** and the newborn kitten and seem to belong to a medial system of granule cells that is independent from the olfactory tubercle and from olfactory fibers. Aggregations of granule cells occur also outside the olfactory tubercle and the insula magna: in the **hedgehog** and the rabbit, clusters lie scattered in the n. accumbens. Distribution of granule cells outside the olfactory tubercle is related to ontogenetic development: in newborn kittens, granule cells extend from the subependymal layer of the lateral ventricle, where they probably originate, to the medioventral border of the hemisphere, and also distribute throughout the n. accumbens and the ventral pallidum. Thus, the granule cell territory is initially wider, and the original distribution is maintained in some species.(ABSTRACT TRUNCATED AT 400 WORDS)

L9 ANSWER 14 OF 42 MEDLINE
ACCESSION NUMBER: 89306625 MEDLINE
DOCUMENT NUMBER: 89306625
TITLE: The role of segment polarity genes during Drosophila neurogenesis.
AUTHOR: Patel N H; Schafer B; Goodman C S; Holmgren R
CORPORATE SOURCE: Howard Hughes Medical Institute, Department of Biochemistry, University of California--Berkeley 94720.
CONTRACT NUMBER: R01 NS18366 (NINDS)
SOURCE: GENES AND DEVELOPMENT, **(1989 Jun)** 3 (6) 890-904.
Journal code: FN3. ISSN: 0890-9369.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198910
AB Segment polarity genes in Drosophila are required for the proper formation of epidermal pattern within each segment. Here we show that certain segment polarity genes are also critical for the determination of specific **neuronal** identities in the developing central nervous system (CNS) of the Drosophila embryo. For several mutants, however, the pattern defects do not simply parallel their cuticular phenotypes. In fused, armadillo, and cubitus interruptus Dominant mutants, much of the CNS appears relatively normal. In **hedgehog** mutants, the CNS is highly disorganized, but this disruption may occur secondary to the initial events of neurogenesis. The specific cellular defects in patched mutants suggests that this gene specifies a subset of neuroblasts and neural progeny underlying the region of epidermal pattern defect. gooseberry mutants display a complex series of alterations in **neuronal** identity both underlying and outside of the region of epidermal modification. **Neuronal** identities of a set of cells along the midline appear to be changed in Cell mutants. The phenotype of wingless mutants is the most restricted and may be due to improper communication between sibling **neurons**. Thus, in addition to their functions in epidermal pattern formation, at least four of the segment polarity genes (gooseberry, patched, Cell, and wingless) appear to

have specific roles in the control of cell fate during neurogenesis.

L9 ANSWER 15 OF 42 MEDLINE
ACCESSION NUMBER: 89303491 MEDLINE
DOCUMENT NUMBER: 89303491
TITLE: Seasonal changes in the nucleoli of Purkinje cells of the **hedgehog** cerebellum.
AUTHOR: Giacometti S; Scherini E; Bernocchi G
CORPORATE SOURCE: Dipartimento di Biologia Animale, Universita' di Pavia e Centro di Studio per l'Istochimica del C.N.R., Italy..
SOURCE: BRAIN RESEARCH, **(1989 May 29)** 488 (1-2) 365-8.
Journal code: B5L. ISSN: 0006-8993.
PUB. COUNTRY: Netherlands
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198910
AB A relationship between size and shape of nucleolus and cellular metabolic demands can be seen from measurements of Purkinje cell nucleoli in cerebellar hemispheres during the annual cycle of the **hedgehog**. During hibernation, nucleoli are smaller than during activity. The extent of the associated heterochromatin increases from activity to the beginning of hibernation. Moreover, during activity it is mostly distributed in small masses all around the nucleolus, while during hibernation it is clumped in a single mass. Data indicating a lesser protein synthesis by **neurons** during hibernation agree with electrophysiological indications that during hibernation the cerebral cortex, linked to the cerebellar hemispheres via afferent systems, is silent.

L9 ANSWER 16 OF 42 MEDLINE
ACCESSION NUMBER: 89269826 MEDLINE
DOCUMENT NUMBER: 89269826
TITLE: Myelinated **neurons** in the central nervous system of the **hedgehog**.
AUTHOR: Pospisilova E; Malinsky J
SOURCE: ACTA UNIVERSITATIS PALACKIANAE OLOMUCENSIS FACULTATIS MEDICAE, **(1988)** 120 97-115.
Journal code: 2AL. ISSN: 0231-5599.
PUB. COUNTRY: Czechoslovakia
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
ENTRY MONTH: 198909

L9 ANSWER 17 OF 42 MEDLINE
ACCESSION NUMBER: 89167568 MEDLINE
DOCUMENT NUMBER: 89167568
TITLE: Hippocampus and dentate area of the European **hedgehog**. Comparative histochemical study.
AUTHOR: Crutcher K A; Danscher G; Geneser F A
CORPORATE SOURCE: Department of Anatomy, University of Utah, Salt Lake City.
CONTRACT NUMBER: NS17131 (NINDS)
SOURCE: BRAIN, BEHAVIOR AND EVOLUTION, **(1988)** 32 (5) 269-76.
Journal code: B5G. ISSN: 0006-8977.
PUB. COUNTRY: Switzerland
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198907
AB The hippocampal formation in the European **hedgehog** was examined with acetylcholinesterase (AChE) histochemistry and catecholamine histofluorescence in order to define the normal distribution of septohippocampal fibers and noradrenergic fibers, respectively, as well as to compare these inputs with the hippocampal cytoarchitecture as revealed with Nissl stain. In addition, alterations in the histochemical appearance

following septohippocampal denervation were examined. Although the overall pattern of AChE-positive and noradrenergic fibers is similar to that observed in other mammals, some striking variations were observed, particularly within the dentate area. Thus, except for a heavily stained supragranular band, the AChE activity of the molecular layer is uniformly low without any obvious lamination, contrasting with the situation in most other mammalian species. The noradrenergic innervation of the dentate area showed the same density of fibers in the molecular layer and hilus, a pattern differing strikingly from the predominance of noradrenergic fibers in the hilus of other mammalian species. Such variations may reflect greater phylogenetic diversity in diffuse modulatory connections as compared with more precise topographical pathways.

L9 ANSWER 18 OF 42 MEDLINE
ACCESSION NUMBER: 88114869 MEDLINE
DOCUMENT NUMBER: 88114869
TITLE: A Golgi study of the sixth layer of the cerebral cortex. I.
The lissencephalic brain of Rodentia, Lagomorpha, Insectivora and Chiroptera.
AUTHOR: Ferrer I; Fabregues I; Condom E
CORPORATE SOURCE: Departamento de Anatomia Patologica, Hospital Principes de Espana, Hospitalet de Llobregat, Barcelona, Spain..
SOURCE: JOURNAL OF ANATOMY, **(1986 Apr)** 145 217-34.
Journal code: HBB. ISSN: 0021-8782.
PUB. COUNTRY: ENGLAND: United Kingdom
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198805

AB A study of the morphological characteristics of the **neurons** in layer VI of the cerebral cortex was carried out using the rapid Golgi method in several lissencephalic species including Rodentia (rat, mouse, vole (Microtus agrestis) and hamster), Lagomorpha (rabbit), Insectivora (**hedgehog**) and in the Chiroptera the dwarf bat (Pipistrellus pipistrellus). There was a basic uniformity in the structure of the sixth layer. Main **neuronal** types in lamina VIa were large pyramidal **neurons**, triangular or atypical pyramidal cells, multiapical pyramidal **neurons**, inverted pyramids, fusiform **neurons** , Martinotti cells and bi-tufted cells. Main **neuronal** types in lamina VIb were medium sized, flattened pyramids, large and small horizontal **neurons**, horizontal pyramidal cells, fan shaped **neurons** and multipolar spinous **neurons** with long descending axons. Sparsely spinous and spine-free multipolar **neurons** with short axons were present in the two laminae of layer VI, but sparsely spinous **neurons** with axons similar to those found in basket cells of other layers of the cortex were observed mainly in lamina VIa. **Neuronal** subsystems were tentatively classified on the basis of the course of the axons. Pyramidal **neurons**, fusiform **neurons**, multiapical pyramidal cells, inverted pyramidal cells, fan shaped **neurons** and multipolar **neurons** with large descending axons were interpreted as being the main source of long projection and association connections. Large horizontal **neurons** were interpreted as possible ipsilateral association **neurons** because the horizontal course of the axons over long distances followed the boundary of the deeper region of the sixth layer. Three intracortical (association) subsystems were included. Axons of Martinotti cells and collateral ascending axons of pyramidal **neurons** (including multiapical pyramidal **neurons**) formed the ascending interlaminar fibrillary subsystem. Axons of small horizontal cells and horizontal collaterals of pyramidal **neurons** formed the horizontal intracortical subsystem. Sparsely spinous and spine-free multipolar **neurons** and bi-tufted cells were the main source of the local, non-horizontal fibrillary subsystem.

L9 ANSWER 19 OF 4 MEDLINE
ACCESSION NUMBER: 87211090 MEDLINE
DOCUMENT NUMBER: 87211090
TITLE: Vertical ascending connections in the isocortex.
AUTHOR: Divac I; Marinkovic S; Mogensen J; Schwerdtfeger W; Regidor J
SOURCE: ANATOMY AND EMBRYOLOGY, **(1987)** 175 (4) 443-55.
Journal code: 4PK. ISSN: 0340-2061.
PUB. COUNTRY: GERMANY, WEST: Germany, Federal Republic of
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198708
AB Different fluorescent tracers were applied to the surface of the cortex of rats, marmosets and one **hedgehog**. Irrespective of the kind of tracer and the depth of penetration, some perikarya of layer VI were labelled in each specimen and in all cortical regions. In the rat almost all labelled **neurons** were packed in sublayer VIb, in the marmoset such cells were dispersed throughout layer VI, whereas in the **hedgehog** the degree of their segregation to sublayer VIb was intermediate. Additional experiments in the rat indicated that most of the medium-sized **neurons** in the VIb layer project to layer I, that most of the perikarya projecting to the thalamus are localized in sublayer VIa, that different **neurons** project to the thalamus and to the surface of the cortex, and that only very few perikarya in deep parts of layers III and V and of sublayer VIa send axons or axon collaterals to layers I and II.

L9 ANSWER 20 OF 42 MEDLINE
ACCESSION NUMBER: 86156768 MEDLINE
DOCUMENT NUMBER: 86156768
TITLE: Periaqueductal **neurons** associated to the posterior commissure: a morphological study in the **hedgehog**, rat and cat.
AUTHOR: Lara M H
SOURCE: ANATOMISCHER ANZEIGER, **(1985)** 159 (1-5) 195-201.
Journal code: 4PE. ISSN: 0003-2786.
PUB. COUNTRY: GERMANY, EAST: German Democratic Republic
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198606
AB The existence of a hitherto undescribed PAG **neuronal** subdivision and its close relationship with the posterior commissure were studied with silver reduced stains and the electron microscope in the **hedgehog**, rat and cat. The PAG **neurons** are arranged in discrete groups composed of 2 up to 6 perikaria surrounded by a fiber and glial neuropil. The dendrites of these **neurons** established synaptic contacts with the ventral commissural fibers and in addition were innervated by PAG intrinsic axons. On the other hand, discrete non-myelinated bundles which apparently arise from the PAG enter through the commissural fibers and makes synaptic contacts with dendritic profiles situated in the intracommissural neuropil zones. These morphological results were discussed in view of a change in the theories that consider the PAG as an non-specific functional group of **neurons**.

L9 ANSWER 21 OF 42 MEDLINE
ACCESSION NUMBER: 86119292 MEDLINE
DOCUMENT NUMBER: 86119292
TITLE: The coexistence of oxytocin and corticotropin-releasing factor in the hypothalamus: an immunocytochemical study in the rat, sheep and **hedgehog**.

AUTHOR: Papadopoulos G C; Karamanlidis A N; Michaloudi H; Antonopoulos A; Antonopoulos J; Papadimitriou A; Velas J G
SOURCE: NEUROSCIENCE LETTERS, **(1985 Dec 4)** 62 (2) 213-8.
Journal code: N7N. ISSN: 0304-3940.
PUB. COUNTRY: Netherlands
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198605
AB The unlabeled antibody enzyme method has been applied on adjacent sections in order to investigate coexistence of oxytocin (OXY) and corticotropin-releasing factor (CRF) within individual **neurons** of the hypothalamic paraventricular nucleus of the colchicine-treated rat, sheep and **hedgehog**. Our results show that, although OXY and CRF immunoreactivities are both expressed by a number of cells in the rat and the sheep paraventricular nucleus, this is not the case for the **hedgehog**.

L9 ANSWER 22 OF 42 MEDLINE
ACCESSION NUMBER: 86026746 MEDLINE
DOCUMENT NUMBER: 86026746
TITLE: [Quantitative analysis of the structure of **neuronal** dendritic spines in the striatum using the Leitz-ASM system].
Kolichestvennyi analiz struktury dendritnykh vetvlenii neironov striatuma s pomoshch'iu sistemy "Leitts-ASM".
AUTHOR: Leontovich T A; Zvegintseva E G
SOURCE: BIULLETEN EKSPERIMENTALNOI BIOLOGII I MEDITSINY, **(1985 Oct)** 100 (10) 499-501.
Journal code: A74. ISSN: 0365-9615.
PUB. COUNTRY: USSR
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: Russian
FILE SEGMENT: Priority Journals; Cancer Journals
ENTRY MONTH: 198602
AB Two principal classes of striatum long axonal **neurons** (sparsely ramified reticular cells and densely ramified dendritic cells) were analyzed quantitatively in four animal species: **hedgehog**, rabbit, dog and monkey. The cross section area, total dendritic length and the area of dendritic field were measured using "LEITZ-ASM" system. Classes of **neurons** studied were significantly different in dogs and monkeys, while no differences were noted between **hedgehog** and rabbit. Reticular **neurons** of different species varied much more than dendritic ones. Quantitative analysis has revealed the progressive increase in the complexity of dendritic tree in mammals from rabbit to monkey.

L9 ANSWER 23 OF 42 MEDLINE
ACCESSION NUMBER: 84265419 MEDLINE
DOCUMENT NUMBER: 84265419
TITLE: The Timm-stained hippocampus of the European **hedgehog**: a basal mammalian form.
AUTHOR: West M J; Gaarskjaer F B; Danscher G
SOURCE: JOURNAL OF COMPARATIVE NEUROLOGY, **(1984 Jul 10)** 226 (4) 477-88.
Journal code: HUV. ISSN: 0021-9967.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198411
AB A quantitative and qualitative description has been made of the components of the Timm-stained hippocampus of the European **hedgehog**. While the laminar organization and the relative size of the major subdivisions of the hippocampus (i.e., area dentata, Ammon's horn, and subiculum) are

similar to those of the albino laboratory rat, but relative proportions and the staining characteristics of some of the components of the subdivisions are different. The differences are particularly evident in Ammon's horn where regions are poorly differentiated along the dentatosubicular axis and the mossy fiber zone is relatively extensive. The description characterizes a hippocampal form that can be used as a basal reference in comparative studies of the mammalian hippocampus.

L9 ANSWER 24 OF 42 MEDLINE
ACCESSION NUMBER: 84109756 MEDLINE
DOCUMENT NUMBER: 84109756
TITLE: Changes of the rhinencephalic **neurons** in the hibernating **hedgehog**.
AUTHOR: Malinsky J; Sedlak C
SOURCE: FOLIA MORPHOLOGICA, **(1983)** 31 (4) 407-9. Journal code: F28. ISSN: 0015-5540.
PUB. COUNTRY: Czechoslovakia
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
ENTRY MONTH: 198405

L9 ANSWER 25 OF 42 MEDLINE
ACCESSION NUMBER: 82178949 MEDLINE
DOCUMENT NUMBER: 82178949
TITLE: Histoenzmological mapping of ATPase and 5-nucleotidase in the spinal cord and medulla oblongata of **hedgehog** (Paraechinus micropus).
AUTHOR: Sukumaran M; Sood P P
SOURCE: ACTA MORPHOLOGICA NEERLANDO-SCANDINAVICA, **(1982 Mar)** 20 (1) 43-55. Journal code: 18Q. ISSN: 0001-6225.
PUB. COUNTRY: Netherlands
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198208
AB The contribution presented deals with the distribution of adenosine triphosphatase (ATP-A) and 5-nucleotidase (AMP-A) in the spinal cord and medulla oblongata of **hedgehog**. The highlights of this study are: (1) AMP-A activity is stronger in neuropil than in **neurons**, in all the areas of spinal cord and medulla oblongata. In the nerve cells the enzyme is localized at the peripheries of the **neurons**, whereas the cytoplasm and nuclei are completely free from enzymatic activity. Reaction in blood vessels is quite high both in gray and white matter. (2) ATP-A activity is seen mainly at the peripheries of the **neurons**. The neuropil activity varies from mild to intense. Reaction in blood vessels is quite strong in all the areas. (3) Fibrous bundles and tracts are negative for both the enzymes. (4) In general, the activity of ATP-A and AMP-A is strongest in cranial nerve nuclei, irrespective of their sensory or motor nature. The distribution of these enzymes has been correlated with the functions of various nuclei of spinal cord and medulla oblongata in **hedgehog**, and compared with other mammals.

L9 ANSWER 26 OF 42 MEDLINE
ACCESSION NUMBER: 82125869 MEDLINE
DOCUMENT NUMBER: 82125869
TITLE: CSF contacting **neuronal** structures of the third ventricle of opossum, **hedgehog** and cat.
AUTHOR: Vigh-Trichmann I; Vigh B; Aros B; Kausz M; Simonsberger P; van den Pol A N
SOURCE: MIKROSKOPIE, **(1981 Dec)** 38 (11-12) 337-55. Journal code: N0E. ISSN: 0026-3702.
PUB. COUNTRY: Austria
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
ENTRY MONTH: 198206

L9 ANSWER 27 OF 42 MEDLINE
ACCESSION NUMBER: 82060505 MEDLINE
DOCUMENT NUMBER: 82060505
TITLE: Neocortical endeavor: basic **neuronal** organization in the cortex of **hedgehog**.
AUTHOR: Valverde F; Lopez-Mascaraque K
SOURCE: PROGRESS IN CLINICAL AND BIOLOGICAL RESEARCH, **(1981)** 59A 281-90.
Journal code: PZ5. ISSN: 0361-7742.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198203

L9 ANSWER 28 OF 42 MEDLINE
ACCESSION NUMBER: 82042784 MEDLINE
DOCUMENT NUMBER: 82042784
TITLE: A comparative histochemical mapping of acid phosphatase, 5-nucleotidase and non-specific esterase in the olfactory bulbs of rabbit and **hedgehog**.
AUTHOR: Mohanakumar K P; Kakaria V K; Sood P P; Sukumaran M; Khan A
H
SOURCE: ACTA NEUROLOGICA BELGICA, **(1981 Jul-Aug)** 81 (4) 199-204.
Journal code: 1AK. ISSN: 0300-9009.
PUB. COUNTRY: Belgium
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198202
AB The paper deals with comparative account of the distribution of acid phosphatase 5-nucleotidase and non-specific esterase in the olfactory bulbs of rabbit and **hedgehog**. The acid phosphatase is observed in all the **neurons** of both the animals. However, the concentration of the enzyme is higher in **hedgehog** as compared to rabbit. The intensity of 5-nucleotidase in all the layers of olfactory bulb of **hedgehog** is stronger than in the rabbit. Intensity of non-specific esterase is quite higher in the olfactory bulb of rabbit than
of **hedgehog**. Along with comparison the distribution of these enzymes have been correlated with their role in the olfactory senses.

L9 ANSWER 29 OF 42 MEDLINE
ACCESSION NUMBER: 81156587 MEDLINE
DOCUMENT NUMBER: 81156587
TITLE: Histological and histoenzymological studies on the medulla oblongata and pons of **hedgehog** (Paraechinus micropus).
AUTHOR: Mohanakumar K P; Sood P P
SOURCE: ACTA MORPHOLOGICA NEERLANDO-SCANDINAVICA, **(1980 Dec)** 18 (4) 291-304.
Journal code: 18Q. ISSN: 0001-6225.
PUB. COUNTRY: Netherlands
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198107
AB A comparative study of the acid and alkaline phosphatases within the medulla oblongata and pons of the **hedgehog** revealed the following facts: 1. All the cellular elements are positive for acid phosphatase, irrespective of their sensory or motor nature, and the large **neurons** of all the nuclei are more strongly positive than the small cells. Furthermore, the nuclei which contain a dense population of **neurons**, appear to be more strongly positive than areas containing scattered **neurons**. 2. Alkaline phosphatase preparations show a strong activity in the walls of blood capillaries of all the nuclei of the

medulla oblongata and pons. Reaction of this enzyme in the neuropil varies
from strong (NNH, NPH, VSP, VM, VS, VL, OLS, NI, NRM), over moderate (reticular nuclei, NS, TSN), mild (NA, NRL) to absent (AP). A few nuclei such as OLS, NT, VM, VL, VS, NPH, and NI also show activity in **neurons**, which appears to be localized at the periphery of the cells only. The significance of the distribution of these enzymes at the various locales are discussed from a functional point of view.

L9 ANSWER 30 OF 42 MEDLINE
ACCESSION NUMBER: 81156586 MEDLINE
DOCUMENT NUMBER: 81156586
TITLE: On the distribution of acetylcholinesterase in the medulla oblongata of **hedgehog** (Paraechinus micropus).
AUTHOR: Sood P P; Mohanakumar K P
SOURCE: ACTA MORPHOLOGICA NEERLANDO-SCANDINAVICA, **(1980 Dec)** 18 (4) 281-90.
Journal code: 18Q. ISSN: 0001-6225.
PUB. COUNTRY: Netherlands
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198107
AB The paper deals with the distribution of acetylcholinesterase (CHO-A) in the various nuclei, tracts and fibrous bundles of the medulla oblongata of
hedgehog. The main highlights of the study are: 1. The cranial nerve nuclei such as nucleus n. hypoglossi, nucleus dorsalis n. vagi, nucleus tractus spinalis n. trigemini, nucleus n. facialis, nucleus abducentis and nucleus ambiguus demonstrate strong activity of the enzyme irrespective of their motor or sensory nature. 2. The nucleus vestibularis
medialis, nucleus vestibularis lateralis and nucleus cochlearis dorsalis exhibit activity of high order, which indicates that the auditory system in the animal is quite active. 3. All the reticular nuclei demonstrate positive activity in **neurons** only, whereas the neuropil is completely free from enzymatic activity. 4. The fibers, tracts and blood vessels are completely free from enzymatic activity. The functional significance of CHO-A has been discussed in relation to its localization in different nuclei, tracts and fibrous bundles.

L9 ANSWER 31 OF 42 MEDLINE
ACCESSION NUMBER: 80159101 MEDLINE
DOCUMENT NUMBER: 80159101
TITLE: Structural and functional characteristics of **hedgehog** polysensory cortical zone.
AUTHOR: Batuev A S; Karamian A I; Pirogov A A; Demianenko G P; Maliukova I V
SOURCE: INTERNATIONAL JOURNAL OF NEUROSCIENCE, **(1980)** 10 (2-3) 69-83.
Journal code: GS4. ISSN: 0020-7454.
PUB. COUNTRY: ENGLAND: United Kingdom
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198008
AB The study of the **neuronal** organization of the **hedgehog** associative cortical zone revealed that besides primitive characteristics this area possesses a number of progressive features. An electrophysiological approach revealed a great number of polysensory **neurons**. The method, based on the HRP retrograde axonal transport, enabled us to discover the connections between primitive associative LP and MD thalamic nuclei and the associative cortex. Motor conditioned reflexes connected with visual discrimination as well as reflexes to signals of different modalities were elaborated quite easily. Conditioning
to a simultaneous visual-auditory complex was found impossible in hedgehogs. Bilateral ablation of associative area results in disruption of

the fine components of sensorimotor integration. It is likely that a primitively organized associative system in hedgehogs participates in the formation of sensorimotor synthesis, but fails to realize complex acts of intersensory integration.

L9 ANSWER 32 OF 42 MEDLINE
ACCESSION NUMBER: 79159491 MEDLINE
DOCUMENT NUMBER: 79159491
TITLE: [Cytoplasmic inclusion bodies in the nerve cells of dogs, Felidae and a **hedgehog**].
Zytoplasmatische Einschlusskorperchen in Nervenzellen bei Hunden, Katzenartigen und einem Igel.
AUTHOR: Fatzer R
SOURCE: SCHWEIZER ARCHIV FUR TIERHEILKUNDE, **(1979 Mar)** 121 (3) 137-44.
Journal code: UE5. ISSN: 0036-7281.
PUB. COUNTRY: Switzerland
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: German
ENTRY MONTH: 197908

L9 ANSWER 33 OF 42 MEDLINE
ACCESSION NUMBER: 78165255 MEDLINE
DOCUMENT NUMBER: 78165255
TITLE: [Comparative morphologic features of the retinas of insectivores and primates].
Sravnitel'no-morfologicheskie osobennosti setchatki nasekomoiadnykh i primatov.
AUTHOR: Ozhigova A P
SOURCE: ARKHIV ANATOMII, GISTOLOGII I EMBRIOLOGII, **(1978)** 74 (3) 61-7.
Journal code: 8NS. ISSN: 0004-1947.
PUB. COUNTRY: USSR
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: Russian
FILE SEGMENT: Priority Journals
ENTRY MONTH: 197808
AB By means of scanning electron microscopy and by neurohistological methods with subsequent quantitative treatment of the data, it is demonstrated that the retina of the **hedgehog** differs from that of the green monkey. In the former, the density of photoreceptors convergence is higher, that corresponds to the night mode of life of the **hedgehog** Monotony in the cells of all the layers, lack of photoreceptor differentiation according to the form of their external segments corresponds to general low level in the organization of the **hedgehog** nervous system. The retina of the **hedgehog** possessing the above mentioned structural peculiarities can be considered as a model reflecting the organization in the peripheral portion of the optic analyzer of the original forms in Mammalia placentalia.

L9 ANSWER 34 OF 42 MEDLINE
ACCESSION NUMBER: 76226917 MEDLINE
DOCUMENT NUMBER: 76226917
TITLE: [Hypoglossal **neurons** of the **hedgehog** during various hibernation phases].
Hypoglossus-**Neurone** des Igels in verschiedenen Winterschlafphasen.
AUTHOR: Merker G
SOURCE: VERHANDLUNGEN DER ANATOMISCHEN GESELLSCHAFT, **(1975)** 69 491-4.
Journal code: X7M. ISSN: 0066-1562.
PUB. COUNTRY: GERMANY, EAST: German Democratic Republic
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: German
ENTRY MONTH: 197610

L9 ANSWER 35 OF 42 MEDLINE
ACCESSION NUMBER: 76117404 MEDLINE
DOCUMENT NUMBER: 76117404

TITLE: [**Neuronal** organization of the "associative" region of the **hedgehog** cortex]. Neironnaia organizatsiia "assotsiativnoi" oblasti kory ezha.
AUTHOR: Tolchenova G A; Dem'ianenko G P
SOURCE: DOKLADY AKADEMII NAUK SSSR, **(1975 Oct 1)** 224 (4) 981-3.
Journal code: EBK. ISSN: 0002-3264.
PUB. COUNTRY: USSR
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: Russian
FILE SEGMENT: Priority Journals
ENTRY MONTH: 197606

L9 ANSWER 36 OF 42 MEDLINE
ACCESSION NUMBER: 75022758 MEDLINE
DOCUMENT NUMBER: 75022758
TITLE: Proceedings: Quantitative changes in the spinal cord motor **neurons** of the hibernating **hedgehog**.
AUTHOR: Malinska J; Malinsky J
SOURCE: FOLIA MORPHOLOGICA, **(1974)** 22 (4) 341-3.
Journal code: F28. ISSN: 0015-5640.
PUB. COUNTRY: Czechoslovakia
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
ENTRY MONTH: 197502

L9 ANSWER 37 OF 42 MEDLINE
ACCESSION NUMBER: 75012276 MEDLINE
DOCUMENT NUMBER: 75012276
TITLE: Light, electron microscopical, and histochemical study of motor nerve cells in spinal cord of hibernating and non-hibernating **hedgehog**.
AUTHOR: Malinska J; Malinsky J; Krajci D
SOURCE: ACTIVITAS NERVOSA SUPERIOR, **(1974 May)** 16 (2) 105.
Journal code: 06J.
PUB. COUNTRY: Czechoslovakia
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 197501

L9 ANSWER 38 OF 42 MEDLINE
ACCESSION NUMBER: 74027528 MEDLINE
DOCUMENT NUMBER: 74027528
TITLE: [Sensory projections in the **hedgehog** neocortex]. Sensornye proektsii v neokortekse ezhei.
AUTHOR: Batuev A S; Karamian A I
SOURCE: DOKLADY AKADEMII NAUK SSSR, **(1973 Aug 21)** 211 (6) 1475-8.
Journal code: EBK. ISSN: 0002-3264.
PUB. COUNTRY: USSR
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: Russian
FILE SEGMENT: Priority Journals
ENTRY MONTH: 197402

L9 ANSWER 39 OF 42 MEDLINE
ACCESSION NUMBER: 73160018 MEDLINE
DOCUMENT NUMBER: 73160018
TITLE: A comparative anatomical and ultrastructural study of the grey matter of the spinal cord in **hedgehog** and bat.
AUTHOR: Malinsky J; Malinska J
SOURCE: ACTIVITAS NERVOSA SUPERIOR, **(1973 Mar)** 15 (1) 30-1.
Journal code: 06J.
PUB. COUNTRY: Czechoslovakia

Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 197308

L9 ANSWER 40 OF 42 MEDLINE
ACCESSION NUMBER: 72050160 MEDLINE
DOCUMENT NUMBER: 72050160
TITLE: Parallels in the visual afferent projections of the thalamus in the **hedgehog** (Paraechinus hypomelas) and the turtle (Pseudemys scripta).
AUTHOR: Hall W C; Ebner F F
SOURCE: BRAIN, BEHAVIOR AND EVOLUTION, **(1970)** 3 (1) 135-54.
Journal code: B5G. ISSN: 0006-8977.
PUB. COUNTRY: Switzerland
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 197203

L9 ANSWER 41 OF 42 MEDLINE
ACCESSION NUMBER: 70130278 MEDLINE
DOCUMENT NUMBER: 70130278
TITLE: [Relationship between levels of protein substances and morphofunctional characteristics of **neurons** of the brain visual and motor analyzer in the **hedgehog**].
O sviazi mezhdu soderzhaniem belkovykh veshchestv i morfofunktsional'nymi osobennostiami neironov zritel'noi i dvigatel'noi analizatornykh sistem mozga ezha.
AUTHOR: Gershtein L M; Ball' T V
SOURCE: ARKHIV ANATOMII, GISTOLOGII I EMBRIOLOGII, **(1969 Jul)** 57 (7) 34-40.
Journal code: 8NS. ISSN: 0004-1947.
PUB. COUNTRY: USSR
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: Russian
FILE SEGMENT: Priority Journals
ENTRY MONTH: 197006

L9 ANSWER 42 OF 42 MEDLINE
ACCESSION NUMBER: 68095848 MEDLINE
DOCUMENT NUMBER: 68095848
TITLE: Organization of the posterior dorsal thalamus of the **hedgehog**.
AUTHOR: Erickson R P; Hall W C; Jane J A; Snyder M; Diamond I T
SOURCE: JOURNAL OF COMPARATIVE NEUROLOGY, **(1967 Oct)** 131 (2) 103-30.
Journal code: HUV. ISSN: 0021-9967.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 196803

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